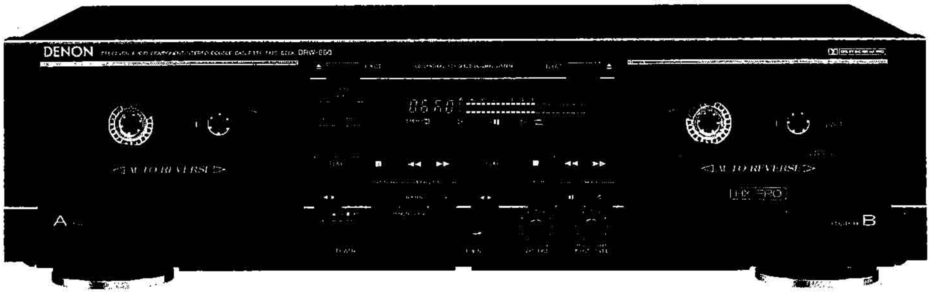
DENON

Hi-Fi Component

SERVICE MANUAL

MODEL DRW-660

STEREO CASSETTE TAPE DECK



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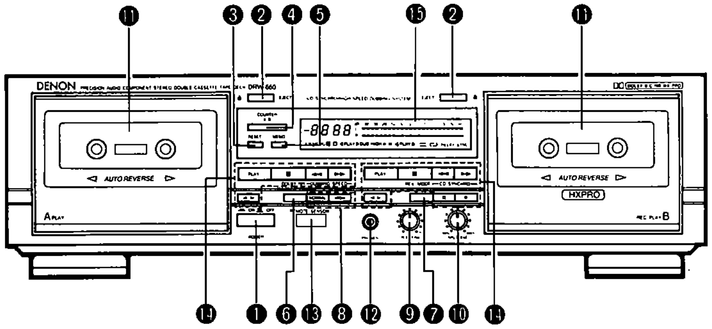
NIPPON COLUMBIA CO., LTD.

FRONT PANEL / PANEL FRONTAL
FRONTPLATTE / VOORPANEEL
PANNEAU AVANT / FRAMSIDA
PANNELLO ANTERIORE / PAINEL FRONTAL


⑪
③
②
④
⑤
⑮
②
⑪
DENON
DRW-660
COUNTER
RESET
MEMO
AUTO REVERSE
HXPRO
A PLAY
REC PLAY B
⑭
①
⑥
⑬
⑧
⑫
⑨
⑦
⑩
⑭

Thank you very much for purchasing the DENON component stereo cassette tape deck.
DENON proudly presents this advanced tape deck to audiophiles and music lovers as a further proof of DENON's non-compromising pursuit of the ultimate in sound quality. The high quality performance and easy operation are certain to provide you with many hours of outstanding listening pleasure.

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Please check to make sure the following items are included with the main unit in the carton:

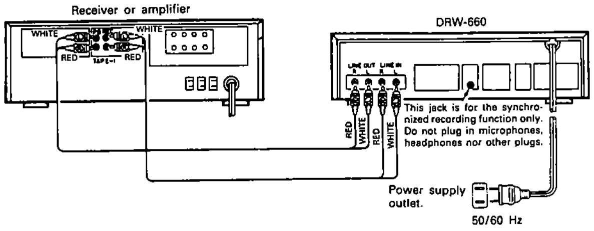
(1)	Operating Instructions	1
(2)	Connection Cords	2
(3)	Mini-Plug Cable	1

FEATURES

- ■ Computer Controlled Mechanism
- ■ Dual Power Supply
- ■ Dolby HX-Pro Headroom Extension System
- ■ Dolby B & C Noise Reduction Systems
- ■ Manual Bias Adjustment Control
- ■ Computing Tape Counter with 4-Digit Readout and Memory Stop
- ■ Music Search System
- ■ FL Peak Level Meters
- ■ Auto Tape Selector
- ■ 2-Speed Dubbing
- ■ Relay Playback
- ■ Synchronized Recording
- ■ Optional Remote Controllable

CONNECTION

- **Leave your entire system (including this cassette deck) turned off until all connections between the deck and other components have been completed.**


Receiver or amplifier
WHITE
WHITE
RED
RED
TAPE
DRW-660
LINE OUT
LINE IN
RED
WHITE
RED
WHITE
This jack is for the synchronized recording function only. Do not plug in microphones, headphones nor other plugs.
Power supply outlet.
50/60 Hz

■ **Connecting the Deck to an Amplifier**
- Before connecting the deck to your amplifier, please review your amplifier's instruction manual.
- Use the white plugs for the left channel and red plugs for the right channel.

■ **Tape Dubbing**
- Many stereo amplifiers and receivers have tape dubbing circuitry so that tape duplication can be performed between two or more tape decks. Review your amplifier's instruction manual for a full explanation of this mode of operation.

■ **Connecting Headphones**
To listen through headphones, plug your headphones into the PHONES jack.

■ **Installation Precautions**
If the deck is placed near an amplifier, TV or tuner, noise (induced hum) or beat interference may result, especially during FM or AM reception. If this occurs, place the deck further away from other components or reorient its position.

Caution
A mechanical sound is heard the first time the power switch is set to "ON" after the power cord is plugged into an outlet. This is the sound of the cassette mechanism being set to the proper operating state, and is normal.
(When using an AC outlet on a receiver or amplifier, used an "UNSWITCHED" outlet.)

NAMES AND FUNCTIONS OF PARTS

❶ Power Switch (POWER)

Press once to turn the power to deck on, and once more to turn the power off.
The deck remains in a stand-by (non-operative) mode for approximately 2 seconds after it is switched on.

❷ Eject Button (EJECT ⏏)

Press this button to open the cassette compartment cover. When the tape is running, press the STOP (■) button first to stop tape transport, then press the Eject button.

❸ Counter Reset Button (COUNTER RESET)

Press this button to reset the tape counter to zero.

❹ Counter Display Deck A/B Selector (COUNTER A/B)

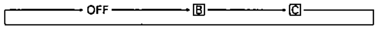
Press this button to switch the tape counter display between deck A and deck B.

❺ Counter Memory Button (MEMO)

When this button is pressed during forward tape travel (▷), fast rewinding (◀◀) will stop automatically at the tape counter position *"0000"*.
When this button is pressed during reverse tape travel (◁), fast forwarding (▶▶) will stop automatically at the tape counter position *"0000"*. See page 11.

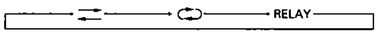
❻ Dolby NR Button (DOLBY NR)

To record or playback tapes with Dolby B or C-type noise reduction, set this button to "B" or "C". Turn it off when not using the Dolby NR system. If you further press the button during the display, the type will change in the following cycle.



❼ Reverse Mode Button (REV. MODE)

Select the type of tape transport. The reverse mode can be set to ⇄ (one side), ⟲ (continuous playback), RELAY (relay playback).
If you further press the button during the display, the reverse mode will change in the following cycle.



❽ Dubbing Speed Buttons (DUBBING SPEED)

Pressing the NORMAL button starts regular speed dubbing from deck A to deck B. Press the HIGH button to perform dubbing at double speed. See page 10.

❾ Bias Fine Control (BIAS FINE)

(For Normal, CrO_2 and Metal tape)
Use this control to fine-adjust the bias. Standard bias is obtained at the center click-stop position. See page 9.

❿ Input Level Control (INPUT LEVEL)

This knob adjusts the recording input level. It affects the level in both channels. See page 9.

⓫ Cassette Compartment Cover

If the cover is not closed completely, the tape transport buttons will remain inoperative.

⓬ Headphone Jack (PHONES)

For private music enjoyment without disturbing others, or for monitoring a recording, a headphone set may be connected to this jack. Use a headphone with an impedance rating of 8 to 1200 ohms.

⓭ Remote Sensor (REMOTE SENSOR)

With DRW-660 the remote control unit is not included.
Each of "PLAY, FF, REW, STOP, REC PAUSE and REC/REC MUTE" functions can be remote controlled with wireless handset of the receiver (DRA Series receivers). For details refer to the DRA Series operating instructions.
NOTE:
Note that only the A deck can be operated with remote control units which have no A/B selector button.

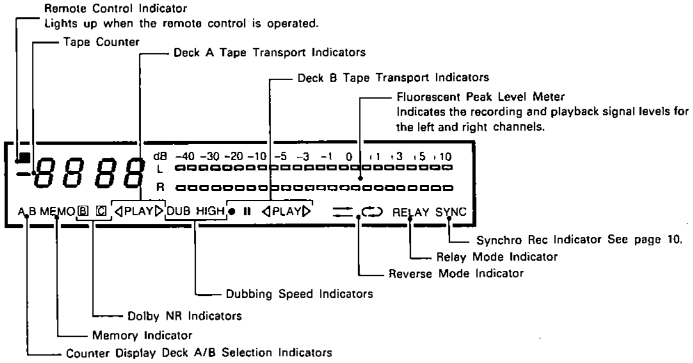
Caution:
Whenever the power switch is in the OFF state, the apparatus is still connected on AC line voltage.
Please be sure to unplug the cord when you leave home for, say, a vacation.

⓮ Tape Transport Buttons

PLAY	Play Button	Press to playback tape.
■	Stop Button	Press to stop the tape in any mode.
◀◀	Fast Rewind Button	Press for fast rewind.
▶▶	Fast Forward Button	Press for fast forwarding.
● REC/REC MUTE (Deck B only)	Rec/Rec Mute Button	Press the REC/REC MUTE (●) button and PLAY button simultaneously to start recording. If only the REC/REC MUTE (●) button is pressed, the deck enters the Recording Pause mode. Pressing this button in the Recording Pause mode will start Auto Rec Mute, and a 5-second silent space is recorded onto the tape. See page 11.
II REC PAUSE (Deck B only)	Rec Pause Button	Press this button to enter the recording pause mode from the recording or recording mute mode. This button can only be used during recording. See page 11.
◀ ▶	Direction Button	Changes the tape transport direction from forward "▶" to reverse "◀", and vice versa.

⓯ Display

Indicators with an encircled number light up when the corresponding button is pressed.

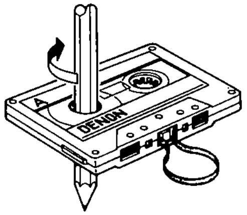


Remote Control Indicator
Lights up when the remote control is operated.
Tape Counter
Deck A Tape Transport Indicators
Deck B Tape Transport Indicators
Fluorescent Peak Level Meter
Indicates the recording and playback signal levels for the left and right channels.
8888
dB -40 -30 -20 -10 -5 -3 -1 0 +1 +3 +5 +10
L
R
A B MEMO B C ◁PLAY▷ DUB HIGH ● II ◁PLAY▷ RELAY SYNC
Synchro Rec Indicator See page 10.
Relay Mode Indicator
Reverse Mode Indicator
Dubbing Speed Indicators
Dolby NR Indicators
Memory Indicator
Counter Display Deck A/B Selection Indicators

CASSETTE TAPES

■ Handling Precautions

- C-120 Cassettes
  C-120 cassette tapes are not recommended as they use a very thin tape base which may become tangled around the capstan or pinch roller.
- Tape Slack
  Before putting a tape into the deck, take up any slack with a pencil or your finger tip. This precaution prevents the tape from becoming entangled around the capstan or pinch roller.

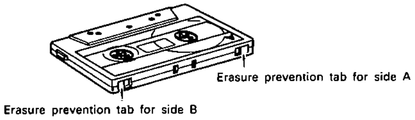


■ Storage Precautions

- Do not store cassette tapes in a place where they will be subject to:
  - Extremely high temperature or excessive moisture
  - Excessive dust
  - Direct sunlight
  - Magnetic fields (near TV sets or speakers)
- To eliminate tape slack, store your cassettes in cassette cases with hub stops

■ Accidental Erasure Prevention

- All cassettes have erasure prevention tabs for each side. To protect valuable recordings from accidental or inadvertent erasure, remove the tab for the appropriate side with a screwdriver or another tool.
- To record on a tape whose erasure prevention tabs have been removed, cover the tab holes with adhesive tape.

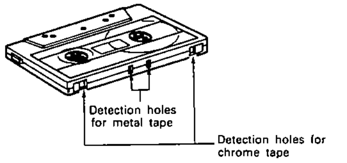


Erasure prevention tab for side A
Erasure prevention tab for side B

AUTOMATIC TAPE SELECTION

This Stereo Cassette Deck contains an automatic tape selector which automatically selects the optimum bias and equalization for the tape in use. This is accomplished by detection of the tape type detections holes in the cassette housing.

- If a tape without tape type detection holes is used, the deck will be set for normal tapes.



Detection holes for metal tape
Detection holes for chrome tape

PLAYBACK

- The operations described below apply to deck A and deck B alike.
- Switch on your amplifier or receiver.
- Set the Tape Monitor switch on your amplifier or receiver to the TAPE position.
- The numbers in the illustration below depict the order in which operation steps are carried out.

① Press the POWER switch ❶ to the ON (▬) position.
② Press the EJECT (⏏) button ❷ to open the cassette compartment cover ●.
③ Load the cassette tape and close the cassette compartment cover ●.
④ When listening to a tape that has been recorded with Dolby noise reduction, set the DOLBY NR button ● to match the system used at the time of recording.
Pressing the DOLBY NR button ● selects Dolby noise reduction type B (and the [B] indicator lights up).
One more press of the DOLBY NR button ● selects Dolby noise reduction type C (and the [C] indicator lights up).
Pressing the DOLBY NR button ● once again switches Dolby noise reduction off.

→ Dolby NR off → Dolby NR type B →
Dolby NR type C ←

⑤ Press the Direction (◀ ▶) button ● to select the direction of tape transport.

Transport Direction	Indicator
Forward	▷
Reverse	◁

⑥ Select the type of tape transport with the REVERSE MODE button ❼.

Mode	Indicator
To listen to one side only	⇄
To listen to repeat playback of both sides	⟲
To listen to continuous play back of both sides and both decks.	RELAY

⑦ Press the PLAY button ● to begin playback. The PLAY (◁ or ▷) indicator will light during playback.
⑧ Press the stop (■) button ● to stop the playback.
- In the continuous playback mode (REVERSE MODE set to ⟲), playback of both tape sides will be repeated 5 times and then stop automatically.
- If different types of Dolby noise reduction are used for record and playback, playback response will be adversely effected.
- When power is turned off during tape transport, it may not be possible to remove the cassette by pressing the EJECT (⏏) button. In this case, turn on power again before you press the EJECT (⏏) button.

■ RELAY PLAY (continuous playback of the tapes in deck A and deck B)

- Load a cassette tape into deck A and B, and set the Dolby NR button correctly.

① REVERSE MODE set to "RELAY" ❼.
② Press the PLAY button ● of the deck you first wish to listen to.
The PLAY indicator of the deck playing back the tape will light up.

③ To stop relay play, press the stop (■) button ● of the deck currently playing the tape.
- Relay play will play decks A and B in succession for 5 cycles, upon which playback stops. When playback starts from deck B, when switching to deck A, the first deck A playback cycle will be counted as the second cycle. The completion of 5 cycles will always be at the opposite side of the tape in deck B.

■ MUSIC SEARCH SYSTEM

The music search system detects blank sections (lasting for at least 4 seconds) between selections in order to locate the beginning of selections in the forward or reverse direction.

1. To advance from the current selection to the beginning of the next selection (CUE):
   Press the PLAY button simultaneously with the Fast Forward (⏩) button when the tape is travelling in the forward (▷) direction. Press the PLAY button simultaneously with the Rewind (⏪) button when the tape is travelling in the reverse (◁) direction.
   The deck will skip the rest of the current selection and automatically resume play from the beginning of the next selection.
2. To repeat playback from the beginning of the current selection:
   Press the PLAY button simultaneously with the Rewind (⏪) button when the tape is travelling in the forward (▷) direction. Press the PLAY button simultaneously with the Fast Forward (⏩) button when the tape is travelling in the reverse (◁) direction.
   The deck will rewind the tape to the beginning of the current selection and automatically resume play from that point.
   This is very convenient for repeating playback of the current selection.

Notes on Music Search Operation: .
The search functions operates by detecting comparatively long, blank sections approximately 4 to 5 seconds long, in between recorded selections. Therefore, the system may not operate normally in the following cases:

- Recordings with discontinuous speech or conversation.
- Recordings with long periods of pianissimo (softly played music).
- Recordings with long silences.
- Blank sections with a high level of noise.
- Blank sections shorter than 4 seconds.
- If noise-emitting appliances, such as electric razors, drills, refrigerators, etc., are operated nearby.

RECORDING (DECK B only)

- Switch on your amplifier or receiver and the source component.
- Set the Tape Monitor switch on your amplifier or receiver to the SOURCE position.

① Press the POWER switch ❶ to the ON (▬) position.
② Load the cassette tape ❷, ●.
(Check that the erasure prevention tabs of the cassette housing have not been broken off.)
③ Press the DOLBY NR button ● and select the Dolby NR type that suits the recording.

Recording without Dolby NR
↓
Recording with Dolby NR type B
(The [B] indicator will light up.)
↓
Recording with Dolby NR type C
(The [C] indicator will light up.)

④ Press the Direction (◀ ▶) button ● to select the direction of tape transport.
⑤ Select the type of tape transport with the REVERSE MODE button ❼.

Mode	Indicator
To record on only one side	⇄
To continuously record on both sides	⟲ or RELAY

⑥ Press the REC/REC MUTE (●) button ● to set the recording pause mode. The ●II indicator will light up.
⑦ Adjust the recording level with the INPUT LEVEL control ● while watching the Peak Level Meter
⑧ Press the PLAY button ● to start the recording.
The PLAY (◁ or ▷) and the ● indicator will light during recording.
⑨ To stop recording, press the stop (■) button ●.
⑩ To pause the recording, press the REC PAUSE (II) button ●. Press the PLAY button ● to resume recording.

Caution:
- Be careful not to erase important recordings by mistake. Inadvertent start of recording will happen in the following cases:
  1. If the PLAY button is pressed while the ● indicator lights, recording starts.
  2. If the PLAY and REC/REC MUTE (●) button are pressed at the same time, recording starts.

  The best way to avoid accidental erasure is to break off the two erasure prevention tabs on the cassette housing.

■ PROPER RECORDING LEVEL

A too high recording level can saturate the tape and cause distortion. On the other hand, if the recording level is set too low, soft passages will be marked by residual noise. A proper recording level is the single most important factor for making well balanced recordings.

Guideline for maximum recording level

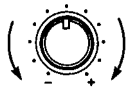
TYPE I (Normal)	0 dB level on peaks
TYPE II (CrO_2)	+1 dB level on peaks
TYPE IV (Metal)	+3 dB level on peaks

Note: The optimum recording level differs depending on the program source and the type of tape used.

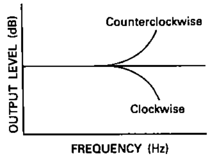
■ RECORDING BIAS ADJUSTMENT

For best recording results, monitoring during recording and comparing different recordings using your own judgement are essential.
The DRW-660 is equipped with a BIAS FINE control to assist you in setting the proper bias for different types and brands of tape. At the center stop-click position, the deck is set to the reference bias level for Normal, CrO_2 and Metal tape. If the resulting recording in this position has too much or too little high frequency content, adjusting the BIAS FINE control can be useful to achieve better results.

If the high frequencies (treble sounds) are to be boosted, turn the BIAS FINE control counter-clockwise to decrease the bias current. Turn the control clockwise to increase bias current.
By the use of this control, you can record tapes with a frequency response that will perfectly match your listening taste.



BIAS FINE



■ REC/REC MUTE AND REC PAUSE Button

1. To record a 5-second blank section during recording:
   Press the REC/REC MUTE (●) button. A 5-second blank will be recorded and the deck will enter the recording standby mode.
2. To record a 5-second blank section during the recording standby mode:
   Press the REC/REC MUTE (●) button from the recording standby mode. A 5 second blank will be recorded and the deck will enter the recording standby mode again.
3. To cancel recording of blank space:
   Press the REC PAUSE (II) button. Blank space recording will be cancelled and the deck enters the recording standby mode.
4. To extend the blank section with another 5 seconds or more:
   Simply press the REC/REC MUTE (●) button and the blank section will be increased with another 5 seconds.

DUBBING (from deck A to deck B)

- Switch on the amplifier or receiver.
- Set the Tape Monitor switch on your amplifier or receiver to the TAPE position.

① Press the POWER switch ❶ to the ON (▬) position.
② Load the cassette tape to be played in deck A and the one to be recorded in deck B ❷, ⓫.
③ Select the type of tape transport with the REVERSE MODE button ❼.

Reverse mode	Operation
⇄	Dubbing is performed only for one side. The decks stop when either deck A or B reaches the end of the tape.
↻	The tape direction is reversed on each deck when they reach the end of the tape. (This is convenient for dubbing to a tape with a different length.)
RELAY	During dubbing of the side facing you, the deck that first reaches the end of the tape will stand by until the other deck reaches the end of the tape, then both decks will reverse the tape direction together. (Depending on the manufacturer, the length of tapes having the same recording time may differ somewhat. Setting this mode permits the arrangement of the beginning portion of the opposite side of the tape.)

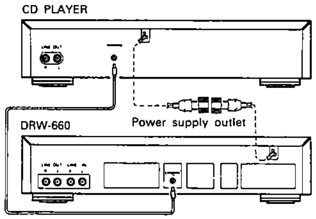
④ To begin normal speed dubbing, press the DUBBING SPEED NORMAL button ❽. The DUB indicator will light at this time.
To high speed dubbing, press the DUBBING SPEED HIGH button ❾. The HIGH indicator will light at this time.
⑤ To stop dubbing, press the stop (■) button ⓭ of deck A or deck B.

- When deck A is in the playback mode and deck B is in the stop condition, setting deck B to the recording pause mode will engage the normal speed dubbing pause mode. Dubbing is then started by pressing the PLAY button.
- When dubbing, the recording level and the Dolby NR coding will be the same as those of the playback tape, regardless of the positions of the INPUT LEVEL control and the DOLBY NR button.
- When listening to the playback sound during normal speed dubbing, set the DOLBY NR button to match the Dolby NR system with which the playback tape was recorded. This will assure correct sound reproduction, but does not affect the recording.
- The playback sound cannot be heard during high speed dubbing.
- Operation using the REC/REC MUTE (●) and REC PAUSE (II) buttons of deck B is permitted during normal speed dubbing.
- Buttons other than the stop (■) button cannot be used during high speed dubbing.

SYNCHRONIZED RECORDING FUNCTION

- Convenient synchronized recording can be performed when used in combination with a DENON CD player equipped for the synchronized recording function.
- SYNCHRO Jack Connection Connect the SYNCHRO Jack with a DENON CD player which is equipped with a SYNCHRO jack, then make a synchronized recording. Use the connection cord supplied with this cassette deck
- Switch on your amplifier or receiver and the CD player.
- Set the tape Monitor switch on your amplifier or receiver to the source position.

① Load the tape onto which you want to record into Deck B, the disc you want to record into the CD player.
② Following the recording instructions on page 9, set the Dolby NR mode, the direction, the reverse mode and the input level.
③ Set the CD player to the stop or pause mode.
④ Press the REC/REC MUTE (●) button and REC PAUSE (II) button simultaneously. The cassette deck and CD player are automatically set to the synchronized recording mode. The "SYNC" indicator lights on the cassette deck and the synchronized recording mode is indicated on the CD player.
(For details, refer to the CD player's operating instructions.)
⑤ To stop synchronized recording, press the stop button on Deck B. The synchronized recording mode is cancelled for both the cassette deck and CD player.
⑥ To stop synchronized recording temporarily, press the stop button on the CD player. A 5-second blank space is created on the tape, after which the recording pause mode is set. The "SYNC" indicator flashes. To resume synchronized recording, press the PLAY button on the CD player.



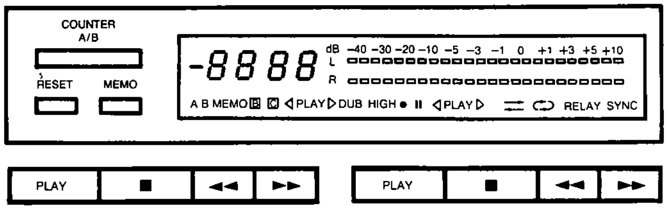
Note:

- If synchronized recording is started when the CD player is in a mode other than the stop or pause mode or when no disc is set, the "SYNC" indicator on the cassette deck flashes and the recording pause mode is set until synchronized recording is possible on the CD player.
- In the synchronized recording mode, only the STOP button on Deck B and the STOP, FF and REW buttons on Deck A will function.

Caution:

- Do not set the cassette deck to the synchronized recording mode when the CD player is in the play mode. Also, do not turn off the power of the cassette deck or the CD player during synchronized recording. Doing so can result in malfunction.
- During the editing operation, when using the editing functions on the CD player, be sure to select a tape with a sufficiently long recording time.
For the CD player's editing functions, refer to the CD player's operating instructions.

TAPE COUNTER AND MEMORY STOP


COUNTER
A/B
RESET
MEMO
-8888
dB −40 −30 −20 −10 −5 −3 −1 0 +1 +3 +5 +10
L
R
A B MEMO B C ◁PLAY▷DUB HIGH ● II ◁PLAY▷ RELAY SYNC
PLAY
■
◀◀
▶▶
PLAY
■
◀◀
▶▶

1) Operation of the Tape Counter

(1) Press the RESET button to reset the counter to "0000".
(2) By using the PLAY, FF, or REW functions, the reading of the counter will change to indicate index position.

- During recording and playback operations, the counter is useful for noting the location of existing programs or positions where recording is to be started.
- The reading of this counter does not correspond with that of any other deck.

(3) Deck A and Deck B have the memory of their own counter. Operate COUNTER A/B to change Deck A or B to display its counter.

2) MEMORY STOP Operation

(1) During recording or playback, the Memory Stop feature can be used to locate a particular point on the tape. Press the COUNTER MEMO button at the desired point.
(2) The MEMO indicator lights.
(3) When the Rewind (◀◀) button is pressed during forward tape travel (▷), or the Fast Forward (▶▶) button is pressed during reverse tape travel (◁), the tape is rapidly rewound (or advanced) until the counter indication of "000C" is reached.

- The Memory Stop feature will rewind or forward the tape to within −5 counts in the forward (▷) direction (from "0000" to "−0005") and to within +5 counts in the reverse (◁) direction (from "0000" to "0005"). After this, several seconds are required for corrective operations.
- The Memory Stop function operates independently in both directions for deck A and deck B. The MEMO indicator will switch over with the use of the COUNTER A/B button.

Caution:
If the memory stop operation is performed after repeated fast-forwarding or rewinding, the tape may not stop at the proper position.

DOLBY B AND C NOISE REDUCTION SYSTEM

- ■ The Dolby noise reduction system substantially reduces the tape background noise (hiss) inherent in the cassette medium. Dolby B NR is most widely in use. However Dolby C NR is a much more recent development and represents significant improvements over Dolby B NR.
- ■ Tape background noise consists primarily of high frequency information, which is particularly annoying during soft passages. The Dolby NR system increases the level of low volume mid- and high-frequency signals during recording and reduces the level of these signals by an identical amount during playback. As a result, the playback signal is identical to the original source, but the level of background noise generated by the tape is greatly reduced.
- ■ The operating principle of Dolby C NR is similar to that of Dolby B NR except for the encoding/decoding response curves. The noise reduction effect obtained with Dolby C NR is up to 20 dB, compared to 10 dB with Dolby B NR. In addition, Dolby C NR uses an anti-saturation network and spectral skewing circuitry for a significant improvement in the dynamic range of the mid- to high-frequencies.

DOLBY HX-PRO HEADROOM EXTENSION SYSTEM

This deck is equipped with the Dolby HX-PRO headroom extension system. Since the system functions automatically during recording, no switching operation or adjustment is required. The system is effective with any type of Normal, CrO_2 and Metal tape.
The Dolby HX-PRO headroom extension system functions during recording to raise the saturation level in the treble range. Therefore, most of the treble range components distorted or lost during recording on conventional cassette decks are more faithfully recorded on the new DRW-660 cassette deck.

Features of the Dolby HX-PRO Headroom Extension System

(1) Performance of Normal and CrO_2 tapes can be improved to very close of that offered by Metal tape.
(2) The dynamics in the treble range are improved significantly.
(3) Since no decoding is necessary during playback, the improved sound can be enjoyed on any type of tape deck, including portable players and car audio systems.
(4) The system functions whether the Dolby B/C NR system is engaged or not.

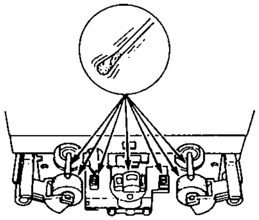
MAINTENANCE

■ Head Cleaning

After long usage, tape coating or dust may adhere to the heads, causing deterioration of sound. Therefore, the parts depicted in the illustration should be cleaned regularly. Use a cotton swab moistened with a tape head cleaning solution (such as alcohol).

Note:

1. Some cleaning cassettes on the market have strong abrasive effects and may scratch the heads. Always use cotton swabs instead of cleaning cassettes.
2. Since the use of metal tape is apt to collect more dust on the heads, the heads should be cleaned more often to enjoy the best possible sound.



■ Cleaning the Pinch Rollers and Capstans

If the pinch rollers or capstans accumulate dust, tape transport may become unstable, as a result from slippage, during recording or playback. The tape can also be damaged if it gets entangled in the capstan.

Clean these parts with a cotton swab or a soft cloth moistened with a tape head cleaning solution (such as alcohol).

■ Demagnetizing the Heads

The heads will become magnetized after long usage or if strongly magnetized objects are brought near them. The result is a generation of noise, loss of the high frequency range, and in extreme cases erasure of treble components on pre-recorded tapes in combination with added noise.

Thus, the heads should be demagnetized at regular intervals. (Head demagnetizers are separately available from your dealer.)

■ How to Demagnetize the Tape Heads

1. Turn off the power.
2. Turn on the demagnetizer while it is at least 30 cm away from the heads. Bring the demagnetizer near the heads and slowly move it in small circles four or five times in front of each head, making sure you do not touch them.
3. Slowly move the demagnetizer away and turn it off when it is at least 30 cm away from the heads.

TROUBLESHOOTING

Check the following before you draw the conclusion that your Stereo Cassette Deck is malfunctioning.

1. Are all the connections correct?
2. Are all system components being operated correctly in accordance with the operating instructions?
3. Are the speakers and amplifier/receiver functioning correctly?

If the tape deck still does not function properly, check the symptom against the list below. If the symptom does not correspond to the check list, please contact your DENON dealer.

Problem	Cause	Remedy
Tape does not run	• Power cord is disconnected. • Tape is loose. • Cassette is not loaded properly. • Defective cassette.	• Check power cord. • Tighten tape with a pencil, etc. • Load cassette properly. • Replace cassette.
Tape is not recorded when REC/REC MUTE (●) button is pressed.	• No cassette is loaded. • Erase prevention tabs are broken off.	• Load cassette. • Cover holes with adhesive tape.
Sound is warbled and distorted.	• Heads, capstan or pinch roller are dirty. • Tape is wound too tight. • Recording input level is too high. • Tape is worn out and has "drop-outs".	• Clean them. • Fast forward or rewind to loosen tape winding. • Adjust recording input level. • Replace tape.
Excessive noise	• Tape is worn. • Heads, capstan or pinch roller are dirty. • Heads are magnetized. • Recording input level is too low.	• Replace them. • Clean them. • Demagnetize heads. • Adjust recording input level.
High frequency range (treble) is emphasized.	• Dolby NR switch is set improperly.	• Set Dolby NR Switch properly.
High frequency range (treble) is lost.	• Heads are dirty. • Tape is worn.	• Clean them. • Replace tape.
The cassette tape cannot be removed.	• If the POWER switch is turned off either during recording or playback and the unit is • stopped, there may be cases when the cassette cannot be removed, even if the EJECT (▲) button is pressed.	• Turn the POWER switch ON (▬) again, and then press the STOP (■) button. • Now, press the EJECT (▲) button to remove the cassette tape.

SPECIFICATIONS

Type	Vertical tape loading; 4-track 2-channel stereo double cassette deck
Heads	Play back head × 1 recording/playback head × 1 Erase head (Double-gap ferrite) × 1
Motors	DC servo motor × 2
Tape Speed	4.8 cm/sec.
Fast Forward, Rewind Time	Approx. 110 sec. with a C-60 cassette
Recording Bias	Approx 105 kHz
Overall S/N Ratio (at 3% THD level)	Dolby C NR on: more than 74 dB (CCIR/ARM)
Overall Frequency Response	20 ~ 18,000 Hz ±3 dB (at –20 dB, Metal tape)
Channel Separation	More than 40 dB (at 1 kHz)
Wow & Flutter	0.07% WRMS, ±0.14% w. peak
Input	
LINE	80 mV (–20 dBm) input level at maximum Input impedance: 50 kohm unbalanced
Output	
LINE	775 mV (0 dB) output level at maximum (with 47 kohm load, recorded level of 200 pwb/mm)
PHONES	1.2 mW output level at maximum (optimum load impedance 8 ohm ~ 1.2 kohm)
Power Supply	50 Hz/60 Hz, voltage is shown on rating label
Power Consumption	16 W
Dimensions	434 (W) × 124 (H) × 275 (D) mm (17-3/32" × 4-57/64" × 10-53/64")
Weight	4.1 kg

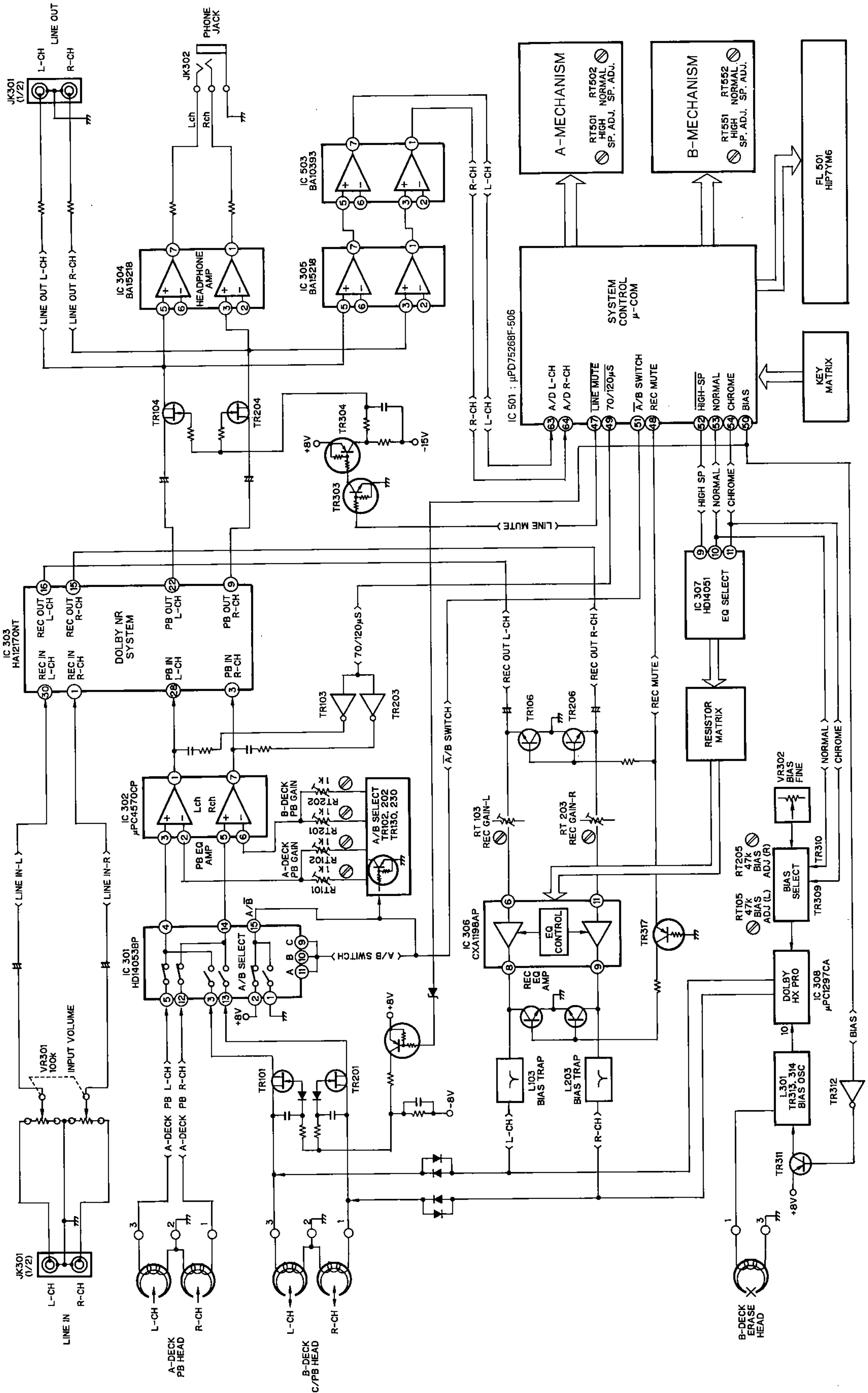
* Above specifications and design are subject to change without prior notice.

Best results will be obtained with use of DENON DX and HD Series cassette tapes.

Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.

"DOLBY", the double-D symbol ᗡD and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

BLOCK DIAGRAM

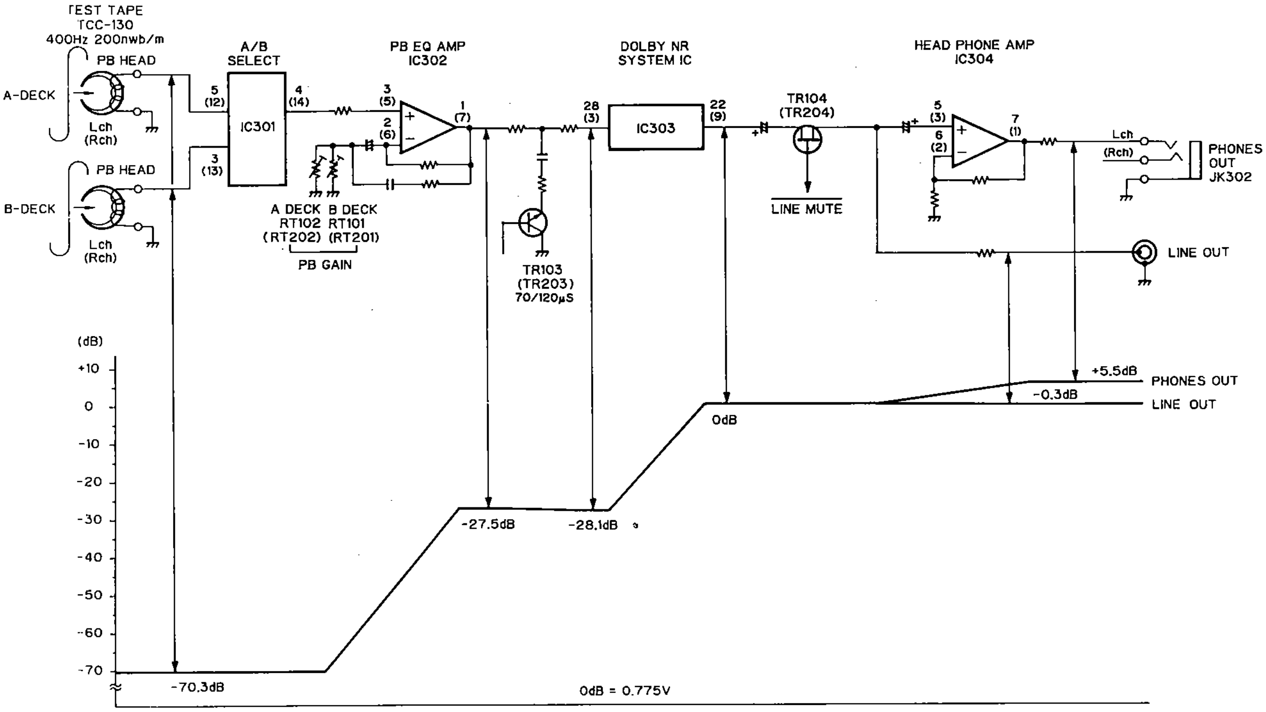

JK301 (1/2)
L-CH
R-CH
LINE OUT
JK302
PHONE JACK
Lch
Rch
IC 503 BA10393
IC 305 BA15218
IC 304 BA15218 HEADPHONE AMP
LINE OUT L-CH
LINE OUT R-CH
A-MECHANISM
RT501 HIGH SP. ADJ.
RT502 NORMAL SP. ADJ.
B-MECHANISM
RT551 HIGH SP. ADJ.
RT552 NORMAL SP. ADJ.
FL 501 HIP7YM6
SYSTEM CONTROL μ-COM
IC 501 : μPD75268F-506
A/D L-CH
A/D R-CH
LINE MUTE
70/120μS
A/B SWITCH
REC MUTE
HIGH-SP
NORMAL
CHROME
BIAS
KEY MATRIX
TR104
TR204
TR304
TR303
+8V
-15V
LINE MUTE
HIGH SP
NORMAL
CHROME
IC 307 HD14051 EQ SELECT
RESISTOR MATRIX
IC 303 HA12170NT
DOLBY NR SYSTEM
REC IN L-CH
REC IN R-CH
PB IN L-CH
PB IN R-CH
REC OUT L-CH
REC OUT R-CH
PB OUT L-CH
PB OUT R-CH
70/120μS
TR103
TR203
A/B SWITCH
REC OUT L-CH
REC OUT R-CH
REC MUTE
TR106
TR206
IC 302 μPC4570CP
PB EQ AMP
Lch
Rch
A-DECK PB GAIN
B-DECK PB GAIN
RT101
RT102
RT201
RT202
A/B SELECT TR102, 202 TR130, 230
RT 103 REC GAIN-L
RT 203 REC GAIN-R
VR302 BIAS FINE
RT105 47k BIAS ADJ (L)
RT205 47k BIAS ADJ (R)
BIAS SELECT
TR309
TR310
NORMAL
CHROME
LINE IN-L
LINE IN-R
IC 301 HD14053BP
A/B SELECT
A/B̄
A B C
IC 306 CXA1198AP
EQ CONTROL
REC EQ AMP
TR317
IC 308 μPC1297CA
DOLBY HX PRO
VR301 100K INPUT VOLUME
TR101
TR201
-8V
L103 BIAS TRAP
L203 BIAS TRAP
L-CH
R-CH
L301 TR313, 314 BIAS OSC
TR312
BIAS
TR311
+8V
A-DECK PB L-CH
A-DECK PB R-CH
LINE IN
L-CH
R-CH
A-DECK PB HEAD
B-DECK REC/PB HEAD
B-DECK ERASE HEAD

LEVEL DIAGRAM

PLAYBACK SYSTEM

TCC-130 DOLBY B-TYPE

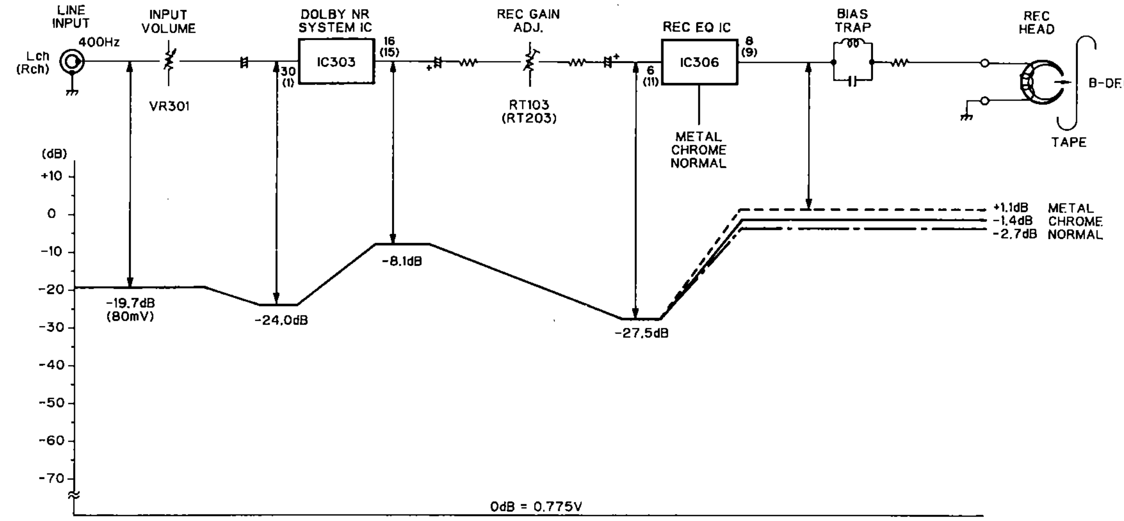
400 Hz 200 nwb/m


TEST TAPE
TCC-130
400Hz 200nwb/m
PB HEAD
A-DECK
Lch
(Rch)
PB HEAD
B-DECK
Lch
(Rch)
A/B
SELECT
IC301
5
(12)
3
(13)
4
(14)
PB EQ AMP
IC302
3
(5)
2
(6)
1
(7)
A DECK B DECK
RT102 RT101
(RT202) (RT201)
PB GAIN
TR103
(TR203)
70/120μS
DOLBY NR
SYSTEM IC
IC303
28
(3)
22
(9)
TR104
(TR204)
LINE MUTE
HEAD PHONE AMP
IC304
5
(3)
6
(2)
7
(1)
Lch
(Rch)
PHONES
OUT
JK302
LINE OUT
(dB)
+10
0
-10
-20
-30
-40
-50
-60
-70
-70.3dB
-27.5dB
-28.1dB
0dB
+5.5dB
-0.3dB
PHONES OUT
LINE OUT
0dB = 0.775V

RECORDING SYSTEM

INPUT FREQUENCY

400 Hz


LINE
INPUT
400Hz
Lch
(Rch)
INPUT
VOLUME
VR301
DOLBY NR
SYSTEM IC
IC303
30
(1)
16
(15)
REC GAIN
ADJ.
RT103
(RT203)
REC EQ IC
IC306
6
(11)
8
(9)
METAL
CHROME
NORMAL
BIAS
TRAP
REC
HEAD
B-DECK
TAPE
(dB)
+10
0
-10
-20
-30
-40
-50
-60
-70
-19.7dB
(80mV)
-24.0dB
-8.1dB
-27.5dB
+1.1dB METAL
-1.4dB CHROME
-2.7dB NORMAL
0dB = 0.775V

DISASSEMBLY INSTRUCTIONS

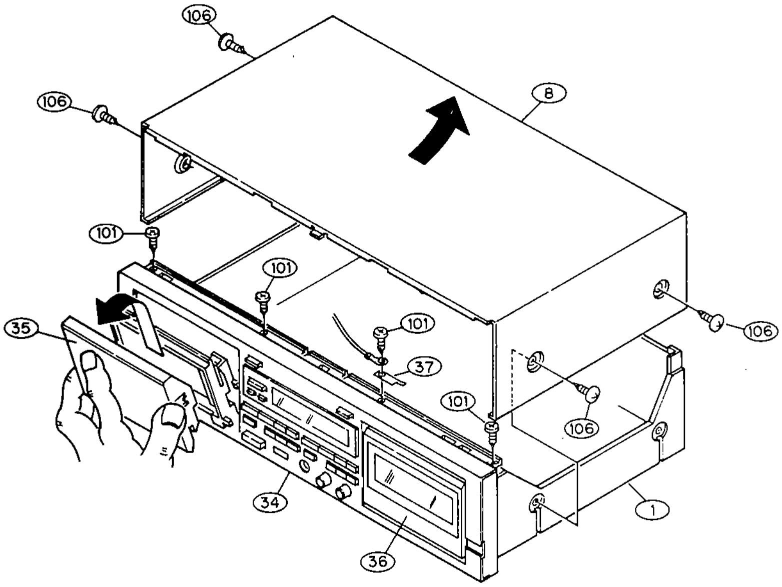
1. How to Remove the Front Panel

(1) Remove the four screws (4 × 10 CTTS-P) (106) in the side of the top cover (8). Move the top cover to the rear and rise it to remove it.

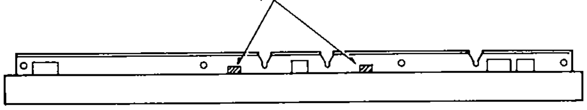
(2) Press the eject knob (25), open the cassette window (35) (36) and remove the cassette window as shown in the figure.

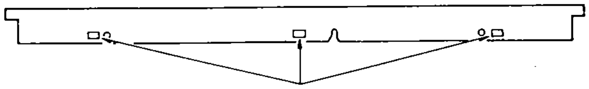
Note: Handle the cassette window with care because it can be scratched easily.

(3) Remove the four screws (3 × 10 CBTS-P) (101) on top of the front panel (34), the two hooks on the top, the three hooks on the bottom and pull the unit forward to detach it.



2 hooks on the top of the front panel





3 hooks on the bottom of front panel

2. How to Remove the Front Escutcheon Ass'y

(1) Remove the top cover (8) and front panel (34). (Refer to Step 1.)

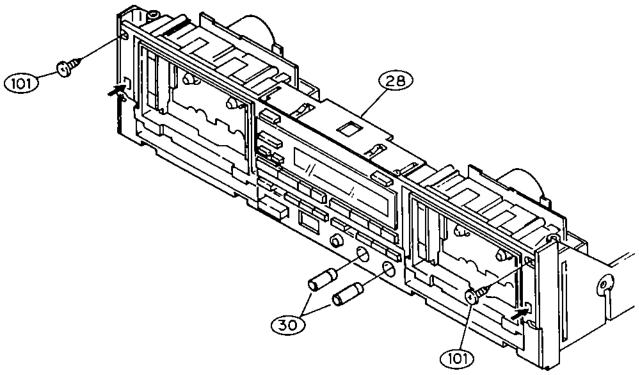
(2) Remove the two retaining screws 3 × 10 CBTS-(P)-B (101) holding the Front Escutcheon at the front.

(3) Disconnect all lead connectors.

C. Mechanism (A) { P.B. Head wire → CN131
C. Mechanism (B) { P.B. REC Head wire → CN141
Erase Head wire → CN142
Meter circuit board { CN121 (27P) → CN121
} Audio circuit board

(4) Remove Volume Knob (B) (30).

(5) Remove the Hooks at the left and right of the front face of the Front Esc. Ass'y, and the two hooks on the bottom, Front Ass'y can be removed towards the front.



Hooks at left and right of front Ass'y

3. How to Remove the Mechanisms

Remove the four Mechanism retaining screws 3×10 CBTS(P)-B (101) and take out C Mechanism (A) (26) and C. Mechanism (B) (27).

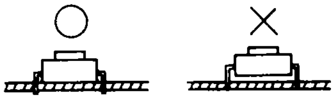
4. How to Remove the Meter Circuit Board

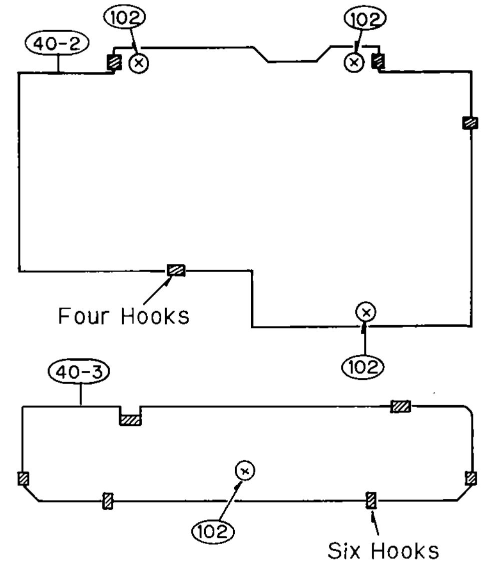
(1) Disconnect lead connectors.

C. Mechanism (A) → CN231 }
C. Mechanism (B) → CN241 } Meter circuit board

(2) Remove the four Meter Circuit Board retaining screws 3 × 8 CBTS(P)-B (102) and take out the Meter Circuit Board.

Note: When replacing the tact switch, check to make sure that it is not floating above the circuit board. If it is floating, the switch will be in the on condition when the set is assembled.



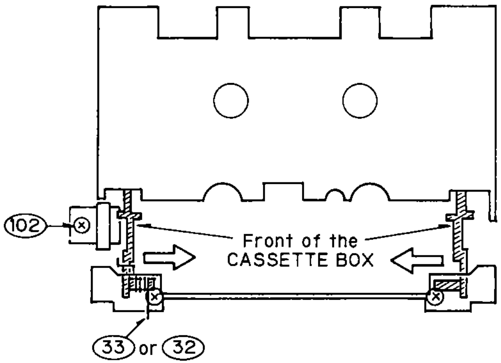


5. How to Remove the Cassette Door

(1) Remove the MINI DAMPER retaining screw 3 × 8 CBTS(P)-B (102) and take out the MINI DAMPER (29).

(2) Remove the 2 retaining screws (102) from the legs of the CASSETTE BOX.

(3) Hold the legs of the CASSETTE BOX folded inwards and pull up to remove the CASSETTE BOX (31) and BOX SPRING (32) (33).



Front surface of front Ass'y

6. How to Remove the Audio Circuit Board

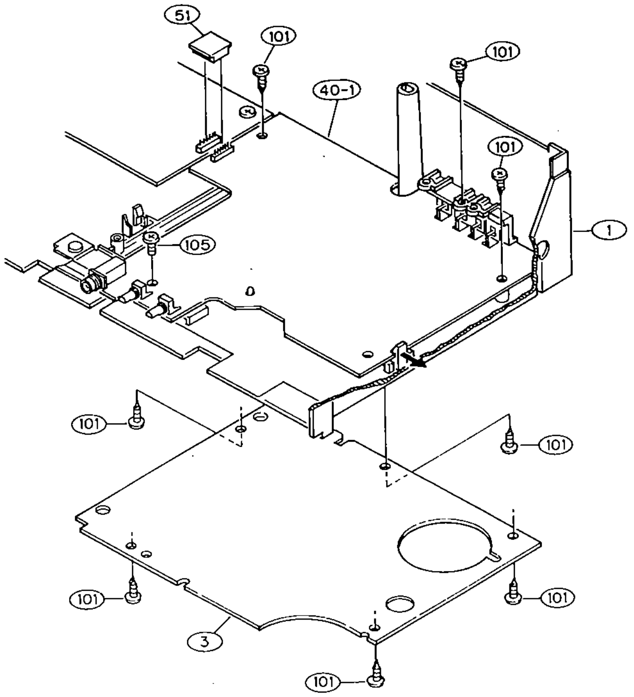
(1) Remove the top cover (8) and the front panel (34). (Refer to section 1.)

(2) Remove the front esc. ass'y. (Refer to section 2.)

(3) Remove the connectors from the audio circuit board and power supply circuit board.

Side of the Power supply circuit board	CN191 → (7P) → CN191 TBG CONNECTOR	Side of the audio circuit board

(4) Remove the screw (3 × 10 CBTS · P tight) (101) (3 × 6 CBTS · S tight) (105) that is holding down the 4P pin jack (13) and circuit board (40-1). By removing the two catches (left and right) of the chassis holding down the circuit board in the directions of the arrows shown below, the audio circuit board can be pulled forward.



Note:

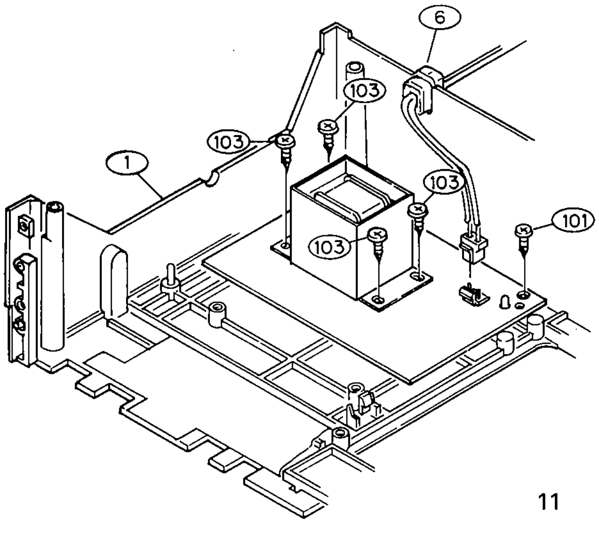
- Almost all of the service repairs to the audio circuit board can be performed by removing the bottom cover on the rear side of the chassis. Only when it is unavoidable should you refer to the removal method mentioned above.
- When reassembling, follow the procedures in the reverse order. However, if each of the various parts are not assembled properly in their respective position, the set cannot be assembled in some cases. Therefore, check the work of each step carefully when assembling.

7. How to Remove the Power Supply Circuit Board

(1) Remove the top cover (8) and the front panel (34). (Refer to section 1.)

(2) Remove the bushing (6) that is fixing the power supply cord from the chassis (1).

(3) When the four screws (4 × 10 CBTS · P tight) (103) (3 × 10 CBTS · P tight) (101) that are holding the power transformer and circuit board are removed, the power supply circuit board can be removed by raising it.



ADJUSTING AND CHECKING THE MECHANISM SECTION

1. Replacing the Pinch Roller (10) (12)

Before replacing the pinch roller, clean the tape contact surface of the pinch roller and the capstan shaft.

Most causes of poor tape transport can be traced to dirty pinch roller and capstan shaft.

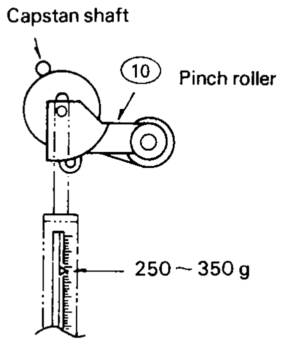
Remove the clips that press the pinch roller and pull the pinch roller forward to remove it.

After replacing, run a padless C-90 tape to check for tape curls at the tape guide section of the head.

2. Checking the Pressure Force of the Pinch Roller (10), (12)

In the playback mode, hook a spring weight onto the bracket at the center of the pinch roller. After separating the pinch roller from the capstan shaft, allow the pinch roller to contact the capstan shaft again. Check to make sure the spring weight reads between 250～350 g when the pinch roller starts to rotate.

Replace the pinch roller when it does not conform to the standard specification values.



3. Replacing the Record/Playback Head

(1) How to remove the R/P HEAD.

1) Remove securing screw and azimuth adjusting screw from the record/playback head.

2) Remove the soldered head wire and disassemble the mechanical unit to remove the record/playback head.

(2) How to assemble the R/P HEAD.

Reverse the above (1) procedures for removing the R/P HEAD.

* Solder the HEAD WIRE according to the diagram.

mechanism (recording/playback head)

4. Checking the Take-up Torque

Load the cassette type torque meter (SONY TW2111).

Check to make sure that the average torque meter reading is within 30-70 g-cm during playback.

5. Checking the FF and REW Torques

Load the cassette type torque meter (SONY TW2231). Check to make sure the torque meter indicates within 80~170 g-cm at the end of FF and REW.

6. Checking the Back Tension Torque During Record/Playback

Load the cassette type torque meter (SONY TW2111); check to make sure the torque meter reads between 2～6 g-cm during playback and that there is no unevenness.

If it is not within this range, replace the reel ass'y or Washer.

7. Checking the FF and REW Times

Load a C-60 cassette tape (DENON HD7E/60); check to make sure the tape is fast forwarded or rewound within 120 seconds. If it is not within this range, check sections 5 and 6.

8. Checking the Existence of a Cassette Housing and the Operation of the Erase Prevention, Metal and Chrome Switch

Confirm that the sensor arm properly detecting the tape type detection holes on the cassette housing.

ADJUSTING THE ELECTRICAL SECTIONS

• Measuring instruments necessary for adjustments

(1) Audio signal generator
(2) Variable resistance attenuator
(3) Electronic voltmeter
(4) Oscilloscope
(5) Frequency counter
(6) Adjustment screwdriver
(7) Trap coil adjustment square stick
(8) Test tapes (SONY TY-224)
 (A-BEX TCC-130, TCC-153, TCC-262B/162B)
 (DENON HD7E/60)
(9) Transport Check cassette tape (A-BEX TCC-902)
(10) Lead line with alligator clip

• Caution on adjusting

(1) Before adjusting, clean the head surface, capstan and the pinch roller with a gauze or a cotton swab moistened with alcohol.
(2) Demagnetize the R/P HEAD and the E. HEAD with a head eraser.
(3) Completely demagnetize the adjustment screwdriver.
(4) Unless instructed otherwise, set the various controls as follows:
 ○ INPUT volume .... maximum
 ○ DOLBY NR switch .... OFF
 ○ BIAS volume .... Center click position

1. Tape Transport Check

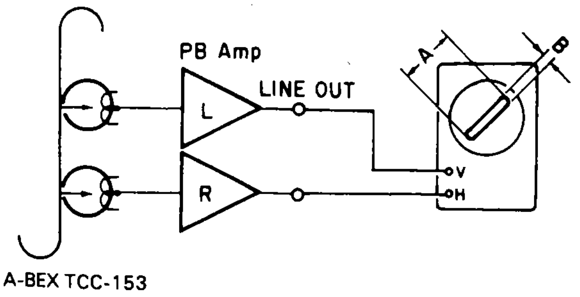
Load the transport check cassette. In the operational mode, illuminate the fixing guides of the R/P HEAD with a lamp and check to make sure the tape edge does not come in contact with the tape guide section.

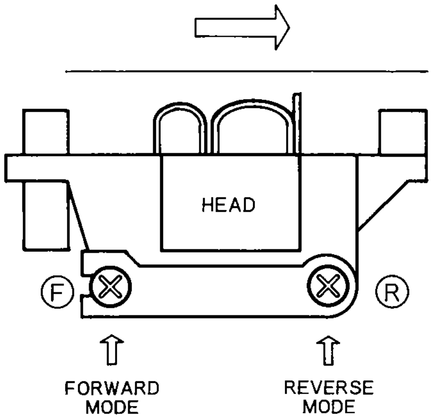
The tape transport is the most important element in determining the performance of a cassette deck.

Avoid moving the various adjustment screws, nuts, etc., as much as possible. Refer to the pages on "Adjusting and Checking the Mechanism Section" when replacing or adjusting the R/P HEAD.

2. Adjusting the Azimuth

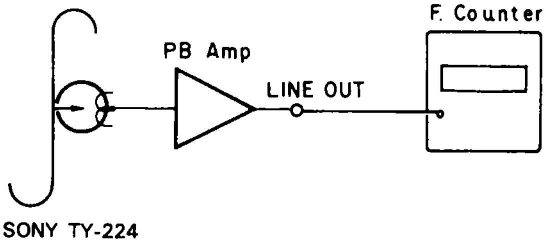
(1) After completing the tape transport check, load the test tape (A-BEX TCC-153).
(2) Playback the test tape; adjust the azimuth screw so that section A of the resurge wave form is maximum and section B is minimum.





3. Checking and Adjusting the Tape Speed

(1) Connect the frequency counter to the LINE OUT terminal and load test tape (SONY TY-224).
(2) Load cassette tapes on both cassette decks A and B. Next, on the deck (A or B) whose speed is to be adjusted, while holding down the PLAY, FF and REW buttons together, press the POWER switch. After the power has been on for about two seconds, the Remote Control Indicator "■" in Display will light up and the cassette deck will begin to play in speed adjustment mode.
 (Speed adjustments can not be made, unless this mode is first selected.)
(3) For normal speed adjustments, use Meter Unit RT502 for Cassette Deck A and RT552 for Cassette Deck B.
 When making high speed adjustments, first press the DUBBING SPEED "HIGH" Button and use RT501 for Cassette Deck A and RT551 for Cassette Deck B.
 (Note that speed adjustment mode is cancelled when the tape is ejected.)

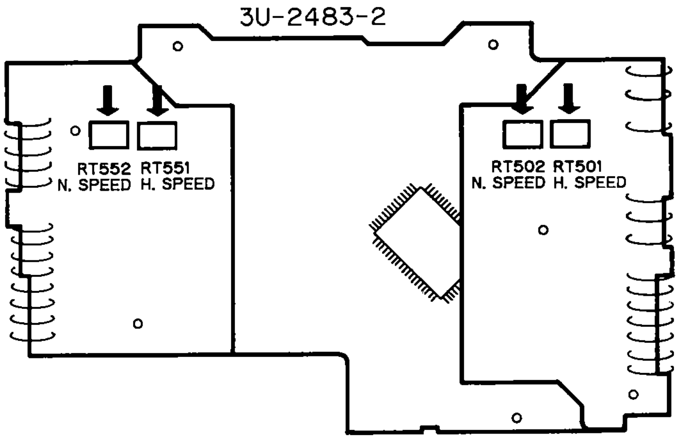


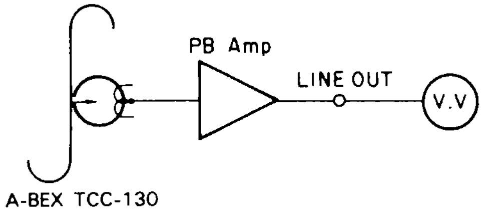
Mode	A/B	Adjusting volume number	F. counter (Hz)
Normal speed	A	RT-502	3020±10
	B	RT-552	3010±10
High speed	A	RT-501	6030±20
	B	RT-551	6020±20

4. Adjusting the Playback Section

(1) Adjusting the playback level

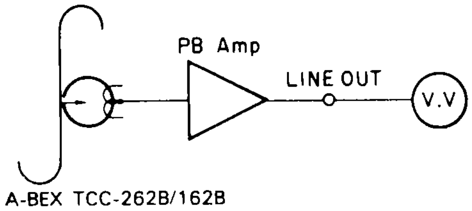
Playback the Dolby standard level test tape (A-BEX TCC-130) and adjust RT-101 (L ch), RT-201 (R ch) so that the LINE OUT voltage becomes 0 dB (775 mV).

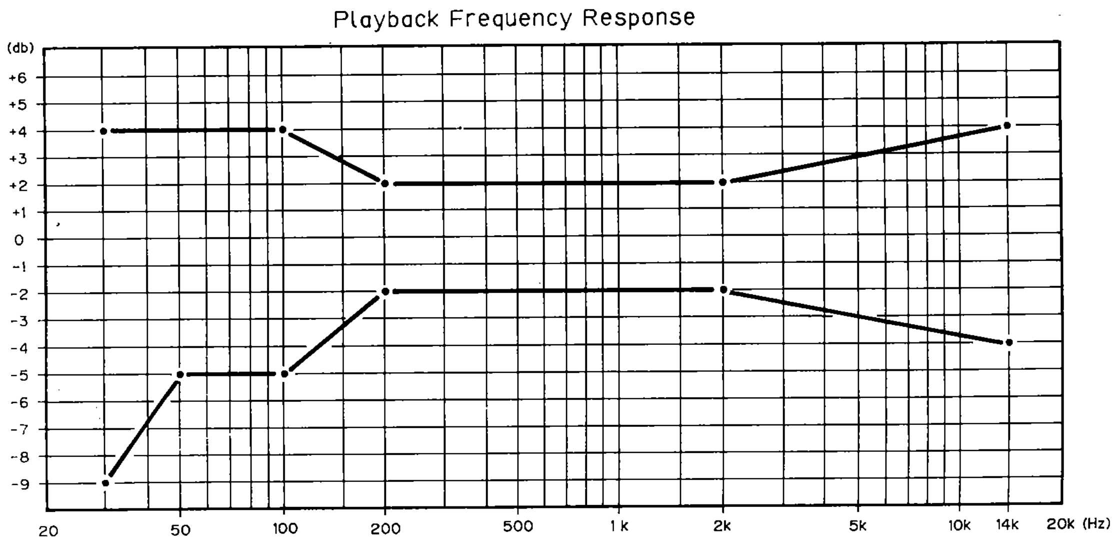

3U-2483-2
RT552
N. SPEED
RT551
H. SPEED
RT502
N. SPEED
RT501
H. SPEED


PB Amp
LINE OUT
V.V
A-BEX TCC-130

(2) Adjusting the playback frequency response

Playback the test tape (A-BEX TCC-262B/162B) and check to make sure that the frequency response meets the specifications in the diagram.


PB Amp
LINE OUT
V.V
A-BEX TCC-262B/162B



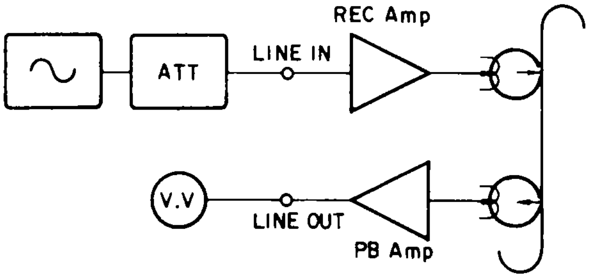
Tape : A-BEX TCC-262B/162B

5. Adjusting the Recording Section

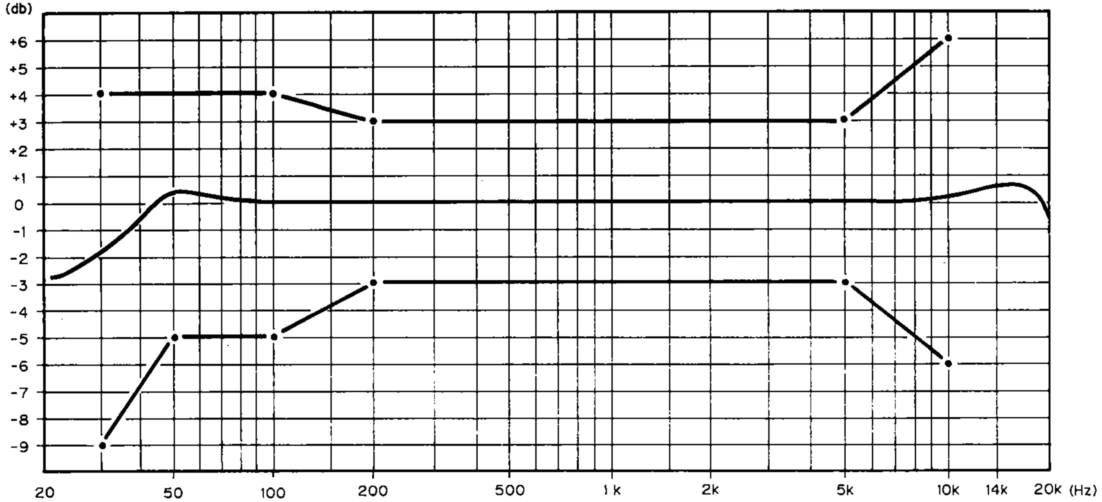
(1) Adjusting the record/playback overall frequency response. (CrO_2)

1) Load the test tape HD7E/60, record a signal with an input level of −40 dB, 1 kHz at the LINE IN terminal; playback this recording.

2) Change the frequency of the input signal to 10 kHz, record and playback; adjust RT-105 (L ch), RT-205 (R ch) so that the characteristic standards meet the following diagram when compared to the 1 kHz signal output level.
(The other TAPE POSITIONS will automatically be adjusted by finishing of the foregoing adjustments.)



Dolby C Record/Playback Overall Frequency Response



Tape : HD-7E/60
Dolby NR : On C
Level : -20dB From Dolby Level

(2) Adjusting the record/playback levels (CrO_2)

1) Load a HD7E/60 tape and after having recorded a signal of 1 kHz (−20 dB), play it back.

2) Adjust RT-102 (L ch) and RT-202 (R ch) so that the output from the line out terminal has the same value as the output when monitoring the recording.

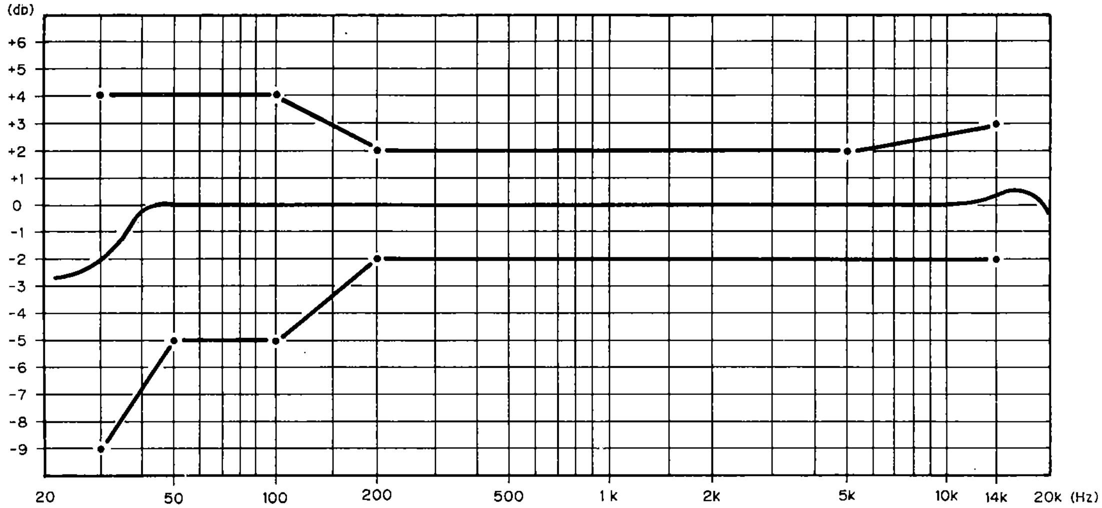
(3) Checking the Dolby C record/playback overall frequency response

1) Set the DOLBY NR switch to the "C" position.

2) Using the test tapes HD7E/60, perform record/playback in the same manner as 5-(1).

3) Check to make sure that the record/playback overall frequency response meets the specifications in the diagram.

Record/Playback Overall Frequency Response



Tape : HD-7E/60
Dolby NR : Off
Level : -20dB From Dolby Level

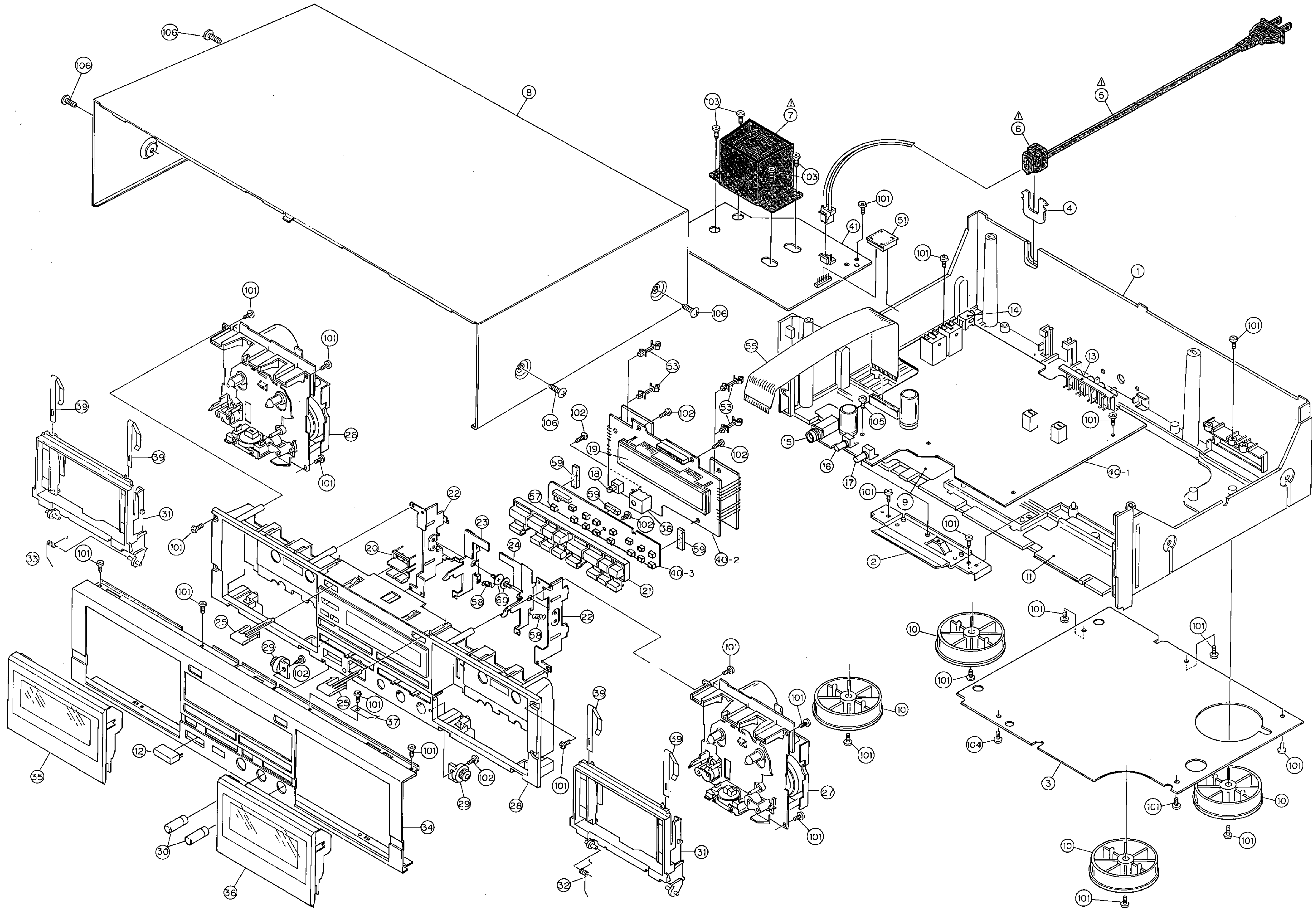
PARTS LIST OF EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks
◉ 1	411 1150 146	CHASSIS	Europe U.K. Australia
◉ 1	411 1150 175	CHASSIS	U.S.A. Canada
◉ 1	411 1150 159	CHASSIS	Multi. Voltage (Asia)
◉ 1	411 1150 162	CHASSIS	(Gold)
◉ 2	412 2523 102	EARTH BRACKET	
◉ 3	105 0787 000	BOTTOM COVER	
◉ 4	412 2008 012	BUSHING PLATE	
⚠ 5	206 2089 009	AC CORD WITH PLUG	Europe
⚠ 5	206 2090 001	AC CORD WITH LABEL	U.K.
⚠ 5	206 2087 001	AC CORD	Australia
⚠ 5	206 2100 001	AC CORD	U.S.A. Canada
⚠ 5	206 2088 000	AC CORD	Multi. Voltage (Asia)
⚠ 6	445 0056 008	CORD BUSH	
⚠ 7	233 5985 005	POWER TRANSFORMER	Europe U.K. Australia
⚠ 7	233 5758 009	POWER TRANSFORMER	U.S.A. Canada
⚠ 7	233 5760 000	POWER TRANSFORMER	Multi. Voltage (Asia)
◉ 8	102 0434 309	TOP COVER	
◉ 8	102 0434 312	TOP COVER	(Gold)
◉ 9	414 0673 005	SHIELD LABEL (A)	
10	104 0208 104	FOOT ASS'Y	
◉ 11	414 0625 008	SHIELD LABEL	
12	113 1357 207	POWER SWITCH KNOB	
12	113 1357 236	POWER SWITCH KNOB	(Gold)
13	204 8261 003	4P PIN JACK	
14	204 8416 007	MINI JACK	
15	204 8264 026	HEAD PHONE JACK	
16	211 0706 001	VOLUME CONT. (BIAS)	V09V25FB102K (VR302)
17	211 0707 000	VOLUME CONT. (INPUT)	V0920V23FA104 (VR301)
18	212 1039 000	PUSH SWITCH	(SW520)
19	393 4147 007	FL TUBE	FIP7YM6 (FL501)
20	113 1569 105	PUSH KNOB	
20	113 1569 118	PUSH KNOB	U.S.A.
20	113 1569 121	PUSH KNOB	(Gold)
21	113 1557 201	FUNCTION KNOB	
21	113 1557 214	FUNCTION KNOB	U.S.A.
21	113 1557 227	FUNCTION KNOB	(Gold)
◉ 22	412 3554 002	LEVER STAY	
◉ 23	412 3550 103	EJECT LEVER (A)	
◉ 24	412 3551 102	EJECT LEVER (B)	
25	113 1556 008	EJECT KNOB	
25	113 1556 011	EJECT KNOB	U.S.A.
25	113 1556 024	EJECT KNOB	(Gold)
◉ 26	338 0156 008	CASSETTE MECHA. (A)	
◉ 27	338 0157 007	CASSETTE MECHA. (B)	
◉ 28	103 1558 203	FRONT ESC. ASS'Y	
◉ 28	103 1558 313	FRONT ESC. ASS'Y	U.S.A. Canada
◉ 28	103 1158 326	FRONT ESC. ASS'Y	(Gold)
29	421 9007 007	MINI DAMPER	
30	112 0720 007	VOLUME KNOB (B)	
30	112 0720 010	VOLUME KNOB (B)	(Gold)
31	103 1372 405	CASSETTE BOX	
31	103 1372 418	CASSETTE BOX	U.S.A.
32	463 0659 018	BOX SPRING (R)	
33	463 0660 010	BOX SPRING (L)	
◉ 34	144 2236 101	FRONT PANEL ASS'Y	
◉ 34	144 2236 114	FRONT PANEL ASS'Y	(Gold)
◉ 35	103 1451 300	CASSETTE WINDOW (A) ASS'Y	
◉ 35	103 1451 313	CASSETTE WINDOW (A) ASS'Y	U.S.A.
◉ 35	103 1451 326	CASSETTE WINDOW (A) ASS'Y	(Gold)
◉ 36	103 1452 309	CASSETTE WINDOW (B) ASS'Y	
◉ 36	103 1452 312	CASSETTE WINDOW (B) ASS'Y	U.S.A.
◉ 36	103 1452 325	CASSETTE WINDOW (B) ASS'Y	(Gold)
37	414 0595 015	EARTH PLATE	
38	499 0150 008	REMOTE UNIT	SBX1610-52 (IC502)
39	463 0655 009	CASSETTE SPRING	
◉ 40	3U-2483	AUDIO/METER P.W.B. UNIT	
40-1		AUDIO UNIT	
40-2		METER UNIT	
40-3		SWITCH UNIT	
◉ 41	3U-2484	POWER SUPPLY P.W.B. UNIT	
51	205 0712 074	7P TBG-S CONNECTOR	
◉ 53	415 0335 003	PCB SUPPORT	
◉ 55	009 0082 009	27P FFC CABLE	
57	212 4388 907	TACT SWITCH	
58	463 8238 004	SPRING	
59	461 0752 003	RUBBER SHEET	
60	473 8047 001	SPECIAL SCREW	
101	473 7508 017	3×10 CBTS (P)-B SCREW	
102	473 7500 044	3×8 CBTC (P)-B SCREW	
103	473 7502 013	4×10 CBTS (P)-Z SCREW	
104	473 7002 018	3×8 CBTC (S)-Z SCREW	
105	473 7002 005	3×6 CBTC (S)-Z SCREW	
106	473 7503 038	4×10 CTTS (P) BK SCREW	
106	473 7503 041	4×10 CTTS (P) NI SCREW	(Gold)
★	212 4698 008	VOLTAGE SELECTOR (D)	Multi. Voltage (Asia) Only

WARNING:

- Parts marked with ⚠ and/or shading have special characteristics important to sefty.
  Be sure to use the specified parts for replacement.
- Part indicated with the mark ◉ are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- (Gold) in the Remarks column refers with gold front panels.
- Part indicated with the mark ★ is not illustrated in the exploded

EXPLODED VIEW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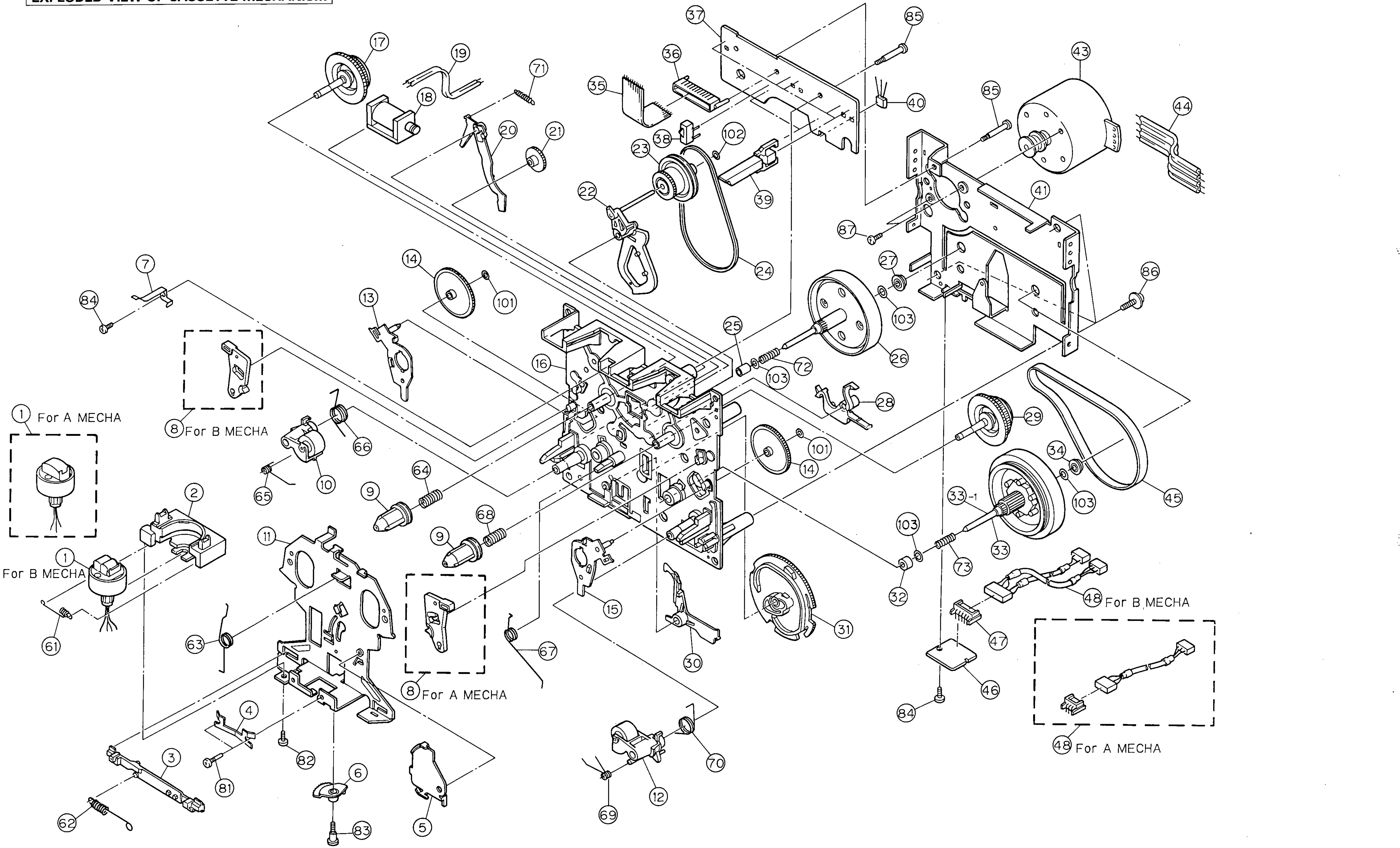
WARNING:
Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

EXPLODED VIEW OF CASSETTE MECHANISM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102
23
22
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24
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43
85
44
41
87
27
103
86
7
84
14
101
13
8 For B MECHA
16
25
72
103
26
28
1 For A MECHA
66
10
65
9
64
29
101
14
34
103
45
33-1
33
103
73
32
2
1 For B MECHA
61
11
9
68
63
8 For A MECHA
67
15
30
31
48 For B MECHA
47
46
84
48 For A MECHA
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70
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PARTS LIST OF CASSETTE MECHANISM EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks
1	948 0000 113	HEAD ASS'Y (PB)	A MECHA.
1	948 0000 126	HEAD ASS'Y (REC/PB)	B MECHA.
2	948 0000 207	HEAD FLAME	
3	948 0000 304	HEAD LEVER	
4	948 0000 401	AZIMUTH SPRING	
5	948 0000 508	ASSIST ARM ASS'Y	
6	948 0000 605	HEAD ARM GEAR	
7	948 0000 008	CASSETTE SPRING	
8	948 0005 105	EJECT LOCK	
9	948 0005 202	REEL CAP	
10	948 0000 809	PINCH ARM ASS'Y (L)	
◉ 11	948 0000 906	HEAD CHASSIS	
12	948 0001 002	PINCHROLLER ARM ASS'Y (R)	
13	948 0001 109	PLAY ARM ASS'Y (L)	
14	948 0001 206	PLAY GEAR	
15	948 0001 303	PLAY ARM ASS'Y (L)	
◉ 16	948 0001 400	OS. CHASSIS	
17	948 0005 309	SUB REEL ASS'Y (L)	
18	948 0001 604	SOLENOID	
◉ 19	948 0005 406	WIRE	
20	948 0001 808	RVS ARM	
21	948 0001 905	FF GEAR	
22	948 0002 001	FR ARM ASS'Y	
23	948 0002 108	FR PULLEY ASS'Y	
24	948 0002 205	FR BELT	
25	948 0002 302	METAL	
26	948 0005 503	FLYWHEEL ASS'Y (L)	
27	948 0002 315	METAL	
28	948 0002 506	BLAKE ARM	
29	948 0001 510	SUB REEL ASS'Y (R)	
30	948 0002 603	TRIGER ARM	
31	948 0002 700	CAM GEAR	
32	948 0005 600	METAL	
33	948 0005 516	FLYWHEEL ASS'Y (R)	
33-1	948 0005 707	FLYWHEEL GEAR ASS'Y (R)	
34	948 0002 331	METAL	
◉ 35	948 0002 823	WIRE (13P) (REC/PB)	B MECHA.
◉ 35	948 0002 836	WIRE (11P) (PB)	A MECHA.
◉ 36	948 0002 904	WIRE HOLDER	
37	948 0003 013	P.C. BOARD	
38	948 0005 804	MODE SWITCH	
39	948 0005 901	LEAF SWITCH	
40	948 0003 301	HALL IC	
41	— — —	FW BRACKET	
43	948 0003 615	MOTOR ASS'Y	
◉ 44	948 0006 007	WIRE	
45	948 0006 104	MAIN BELT	
46	948 0003 806	P.C. BOARD	
47	948 0003 916	HOUSING (PB)	A MECHA.
47	948 0003 903	HOUSING (REC/PB)	B MECHA.
48	948 0006 308	RPE HEAD WIRE (PB)	A MECHA.
48	948 0006 201	RPE HEAD WIRE (REC/PB)	B MECHA.
61	948 0004 708	SPRING	
62	948 0004 711	SPRING	
63	948 0004 724	SPRING	
64	948 0006 405	SPRING	
65	948 0004 740	SPRING	
66	948 0004 753	SPRING	
67	948 0006 502	SPRING	
68	948 0006 418	SPRING	
69	948 0006 779	SPRING	
70	948 0004 782	SPRING	

Ref. No.	Part No.	Part Name	Remarks
71	948 0004 795	SPRING	
72	948 0006 515	SPRING	
73	948 0006 528	SPRING	
81	948 0004 805	SCREW	
82	948 0006 609	SCREW	
83	948 0006 706	SCREW	
84	948 0004 834	SCREW	
85	948 0004 847	SCREW	
86	948 0004 850	SCREW	
87	948 0006 803	SCREW	
101	948 0004 902	WASHER	
102	948 0004 915	WASHER	
103	948 0004 928	WASHER	

WARNING:

- Part indicated with the mark ◉ are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.

NOTE FOR PARTS LIST

- Part indicated with the mark "⊙" are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicated "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/6 W, 1/4 W Type in the P. W. Board parts list.
- Parts marked with this symbol ⚠ ▨ have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

- Refer to the following table for the codes of the resistors and capacitors appearing on the parts list.

- **Resistors**

Ex.:	RN	14K	2E	182	G	FR
	Type	Shape and performance	Power	Resistance ★	Allowable error	Others

RD : Carbon	2B : 1/8W	F : ±1%	P : Pulse-resistant type
RC : Composition	2E : 1/4W	G : ±2%	NL : Low noise type
RS : Metallic film	2H : 1/2W	J : ±5%	NB : Non-burning type
RW : Winding	3A : 1W	K : ±10%	FR : Fuse resistor
RN : Metal film	3D : 2W	M : ±20%	F : Lead wire forming
RK : Metal mixture	3F : 3W		
	3H : 5W		

★ **Resistance**

1 8 2 ⇨ 1800Ω = 1.8kΩ

2 — Indicates number of zeros after effective number

1 8 — 2-digit effective number, decimal point indicated by R.

- Units: Ω

- **Capacitors**

Ex.:	CE	04W	1H	2R2	M	BP
	Type	Shape and performance	Dielectric strength	Capacity ★	Allowable error	Others

CE : Aluminum foil electrolyte	0J : 6.3V	F : ±1%	HS : High stability type
CA : Aluminum solid electrolyte	1A : 10V	G : ±2%	BP : Non-polar type
CS : Tantalum electrolyte	1C : 16V	J : ±5%	HR : Ripple-resistant type
CQ : Film	1E : 25V	K : ±10%	DL : For charge and discharge
CK : Ceramic	1V : 35V	M : ±20%	HF : For assuring high frequency
CC : Ceramic	1H : 50V	Z : +80% −20%	U : UL part
CP : Oil	2A : 100V		C : CSA part
CM : Mica	2B : 125V	P : +100% −0%	W : UL-CSA type
CF : Metallized	2C : 160V		F : Lead wire forming
CH : Metallized	2D : 200V	C : ±0.25pF	
	2E : 250V	D : ±0.5pF	
	2H : 500V	= : Others	
	2J : 630V		

★ **Capacity**

2 R 2 ⇨ 2.2μF

2 — 1-digit effective number, decimal point indicated by R.

2 R — 2-digit effective number, decimal point indicated by R.

- Units: μF, (for P, pF (μμF)
- When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

PARTS LIST OF 3U-2483 AUDIO METER UNIT

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC301	262 0419 008	IC HD14053BP	
IC302	262 0864 006	IC UPC4570C	
IC303	263 0720 004	IC HA12170NT	
IC304	263 0565 007	IC BA15218	
IC305	263 0565 007	IC BA15218	
IC306	263 0589 009	IC CXA1198AP	
IC307	262 0621 003	IC HD14051BP	
IC308	263 0354 001	IC UPC1297CA	
IC501	262 1651 205	IC UPD75268GF-506	
IC502	499 0150 008	REMOTE SENSOR SBX1610-52	
IC503	263 0673 902	IC BA10393F-T1	
IC504	262 1205 907	IC TC74HCU04AF(TP1)	
IC901	263 0656 000	IC MC7808	
IC902	263 0657 009	IC MC7908	
IC903	263 0648 005	IC MC7806CT	
TR101	275 0042 905	Transistor 2SK373(Y)TPE2	
TR102	269 0040 902	Digital Tr. DTC144ES(47K-47K)T	
TR103	273 0245 900	Transistor 2SC2603E/F T	
TR104	275 0061 902	Transistor 2SK184(GR)/(BL)TPE4	
TR106	273 0245 900	Transistor 2SC2603E/F T	
TR107	269 0062 906	Digital Tr. DTC124ES(22K-22K)T	
TR108	273 0303 910	Transistor 2SC1740S(S)T	
TR130	269 0040 902	Digital Tr. DTC144ES(47K-47K)T	
TR201	275 0042 905	Transistor 2SK373(Y)TPE2	
TR202	269 0040 902	Digital Tr. DTC144ES(47K-47K)T	
TR203	273 0245 900	Transistor 2SC2603E/F T	
TR204	275 0061 902	Transistor 2SK184(GR)/(BL)TPE4	
TR206	273 0245 900	Transistor 2SC2603E/F T	
TR207	269 0062 906	Digital Tr. DTC124ES(22K-22K)T	
TR208	273 0303 910	Transistor 2SC1740S(S)T	
TR230	269 0040 902	Digital Tr. DTC144ES(47K-47K)T	
TR302	269 0046 906	Digital Tr. DTA114ES(10K-10K)T	
TR303	269 0062 906	Digital Tr. DTC124ES(22K-22K)T	
TR304	269 0016 907	Digital Tr. DTA144WS(47K-22K)T	
TR305	269 0018 905	Digital Tr. DTC143ES(4.7K-4.7K)T	
TR306	269 0022 904	Digital Tr. DTA143ES(4.7K-4.7K)T	
TR307	269 0018 905	Digital Tr. DTC143ES(4.7K-4.7K)T	
TR309, 310	269 0015 908	Digital Tr. DTC124XS(22K-47K)T	
TR311	272 0025 907	Transistor 2SB562(C)TF	

Ref. No.	Part No.	Part Name	Remarks
TR312	269 0018 905	Digital Tr. DTC143ES(4.7K-4.7K)T	
TR313, 314	273 0245 900	Transistor 2SC2603E/F T	
TR315, 316	269 0020 906	Digital Tr. DTC114ES(10K-10K)T	
TR317	269 0080 904	Digital Tr. DTA114TS(10K)T	
TR501	271 0183 927	Transistor 2SA933(R/S)T93	
TR503	269 0018 905	Digital Tr. DTC143ES(4.7K-4.7K)T	
TR504	272 0025 907	Transistor 2SB562(C)TF	
TR505	269 0018 905	Digital Tr. DTC143ES(4.7K-4.7K)T	
TR506	272 0025 907	Transistor 2SB562(C)TF	
TR507	269 0093 904	Digital Tr. DTA144ES(47K-47K)T	
TR510	269 0082 902	Digital Tr. DTC114EKT96	
TR524, 525	269 0082 902	Digital Tr. DTC114EKT96	
TR530	269 0102 905	Digital Tr. DTC124EKT146	
TR551	271 0183 927	Transistor 2SA933(R/S)T93	
TR553	269 0048 904	Digital Tr. DTC143EKT96	
TR554	272 0025 907	Transistor 2SB562(C)TF	
TR555	269 0048 904	Digital Tr. DTC143EKT96	
TR556	272 0025 907	Transistor 2SB562(C)TF	
TR558, 559	269 0093 904	Digital Tr. DTA144ES(47K-47K)T	
TR660	269 0054 901	Digital Tr. DTC144EKT96	
TR904	272 0025 907	Transistor 2SB562(C)TF	
D101 ~104	276 0432 903	Diode 1SS270A TE	
D201 ~204	276 0432 903	Diode 1SS270A TE	
D302, 303	276 0432 903	Diode 1SS270A TE	
D305	276 0432 903	Diode 1SS270A TE	
D307, 308	276 0432 903	Diode 1SS270A TE	
D311	276 0432 903	Diode 1SS270A TE	
D501 ~510	276 0432 903	Diode 1SS270A TE	
D526	276 0432 903	Diode 1SS270A TE	
D551 ~561	276 0432 903	Diode 1SS270A TE	
D901 ~904	276 0553 905	Diode 1SR35-200A(T93X)	
D905, 906	276 0432 903	Diode 1SS270A TE	
D908	276 0432 903	Diode 1SS270A TE	
D511 ~513	276 0438 910	Diode MA151A	
D518 ~525	276 0438 910	Diode MA151A	
D660, 661	276 0432 903	Diode MA151A	
D662	276 0432 903	Diode 1SS270A TE	
D909 ~911	276 0553 905	Diode 1SR35-200A(T93X)	
D914 ~917	276 0553 905	Diode 1SR35-200A(T93X)	
ZD301	276 0461 903	Zener Diode HZS6A-1TD	
ZD304	276 0468 906	Zener Diode HZS9B-1TD	
ZD306	276 0468 906	Zener Diode HZS9B-1TD	
ZD309	276 0468 906	Zener Diode HZS9B-1TD	
ZD310	276 0468 906	Zener Diode HZS9B-1TD	
ZD660	276 0451 900	Zener Diode HZS2C-1TD	
ZD907	276 0460 904	Zener Diode HZS5C-1TD	
ZD912	276 0482 908	Zener Diode HZS27-1TD	
ZD913	276 0467 907	Zener Diode HZS9A-1TD	

Ref. No.	Part No.	Part Name	Remarks
RESISTORS GROUP (not included Carbon Film ±5% 1/4W type)			
VR301	211 0707 000	Valiable 100K ohm	V0920V25FA104 INPUT
VR302	211 0706 001	Valiable 1K ohm	V09V25FB102K BIAS FINE
RT101, 102	211 6077 909	Adjust 1K ohm	V06PB102
RT103	211 6077 954	Adjust 22K ohm	V06PB223
RT105	211 6077 983	Adjust 47K ohm	V06PB473
RT201, 202	211 6077 909	Adjust 1K ohm	V06PB102
RT203	211 6077 954	Adjust 22K ohm	V06PB223
RT205	211 6077 983	Adjust 47K ohm	V06PB473
RT501, 502	211 8005 021	Adjust 4.7K ohm	V06QB472
RT551, 552	211 8005 021	Adjust 4.7K ohm	V06QB472
J002	247 0018 905	Chip 0 ohm	RM73B--0R0KT
J003	247 0018 905	Chip 0 ohm	RM73B--0R0KT
J501	247 1018 904	Chip 0 ohm	RM73B20R0KT
J504, 506~508	247 1018 904	Chip 0 ohm	RM73B20R0KT
R102	247 0015 940	Chip 2.2M ohm	RM73B--225JT
R103	247 0012 969	Chip 150K ohm	RM73B--154JT
R104	247 0005 905	Chip 100 ohm	RM73B--101JT
R105	247 0013 939	Chip 300K ohm	RM73B--304JT
R106	247 0010 958	Chip 20K ohm	RM73B--203JT
R107	247 0008 960	Chip 3.3K ohm	RM73B--332JT
R108	247 0009 901	Chip 4.7K ohm	RM73B--472JT
R109	247 0007 945	Chip 1K ohm	RM73B--102JT
R110	247 0009 943	Chip 6.8K ohm	RM73B--682JT
R111	247 0014 967	Chip 1M ohm	RM73B--105JT
R112	247 0008 960	Chip 3.3K ohm	RM73B--332JT
R115	247 0009 943	Chip 6.8K ohm	RM73B--682JT
R116	247 0010 961	Chip 22K ohm	RM73B--223JT
R117	247 0006 988	Chip 560 ohm	RM73B--561JT
R118	247 0009 901	Chip 4.7K ohm	RM73B--472JT
R119	247 0008 960	Chip 3.3K ohm	RM73B--332JT
R120	247 0011 944	Chip 47K ohm	RM73B--473JT
R121	247 0011 902	Chip 33K ohm	RM73B--333JT
R122	247 0011 902	Chip 33K ohm	RM73B--333JT
R123	247 0005 905	Chip 100 ohm	RM73B--101JT
R124	247 0006 962	Chip 470 ohm	RM73B--471JT
R126	247 0012 927	Chip 100K ohm	RM73B--104JT
R127	247 0011 986	Chip 68K ohm	RM73B--683JT
R128	247 0010 987	Chip 27K ohm	RM73B--273JT
R129	247 0010 987	Chip 27K ohm	RM73B--273JT
R130	247 0005 905	Chip 100 ohm	RM73B--101JT
R131	247 0014 967	Chip 1M ohm	RM73B--105JT
R132	247 0010 929	Chip 15K ohm	RM73B--153JT
R133	247 0009 901	Chip 4.7K ohm	RM73B--472JT
R134	247 0008 928	Chip 2.2K ohm	RM73B--222JT
R135	247 0009 985	Chip 10K ohm	RM73B--103JT
R136	247 0009 956	Chip 7.5K ohm	RM73B--752JT
R137	247 0010 929	Chip 15K ohm	RM73B--153JT
R138	247 0012 969	Chip 150K ohm	RM73B--154JT
R140	247 0010 987	Chip 27K ohm	RM73B--273JT
R141	247 0008 928	Chip 2.2K ohm	RM73B--222JT
R142	247 0018 905	Chip 0 ohm	RM73B--0R0KT
R202	247 0015 940	Chip 2.2M ohm	RM73B--225JT
R203	247 0012 969	Chip 150K ohm	RM73B--154JT
R204	247 0005 905	Chip 100 ohm	RM73B--101JT
R205	247 0013 939	Chip 300K ohm	RM73B--304JT
R206	247 0010 958	Chip 20K ohm	RM73B--203JT
R207	247 0008 960	Chip 3.3K ohm	RM73B--332JT
R208	247 0009 901	Chip 4.7K ohm	RM73B--472JT
R209	247 0007 945	Chip 1K ohm	RM73B--102JT
R210	247 0009 943	Chip 6.8K ohm	RM73B--682JT

Ref. No.	Part No.	Part Name	Remarks
R211	247 0014 967	Chip 1M ohm	RM73B--105JT
R212	247 0008 960	Chip 3.3K ohm	RM73B--332JT
R215	247 0009 943	Chip 6.8K ohm	RM73B--682JT
R216	247 0010 961	Chip 22K ohm	RM73B--223JT
R217	247 0006 988	Chip 560 ohm	RM73B--561JT
R218	247 0009 901	Chip 4.7K ohm	RM73B--472JT
R219	247 0008 960	Chip 3.3K ohm	RM73B--332JT
R220	247 0011 944	Chip 47K ohm	RM73B--473JT
R221	247 0011 902	Chip 33K ohm	RM73B--333JT
R222	247 0011 902	Chip 33K ohm	RM73B--333JT
R223	247 0005 905	Chip 100 ohm	RM73B--101JT
R224	247 0006 962	Chip 470 ohm	RM73B--471JT
R226	247 0012 927	Chip 100K ohm	RM73B--104JT
R227	247 0011 986	Chip 68K ohm	RM73B--683JT
R228	247 0010 987	Chip 27K ohm	RM73B--273JT
R229	247 0010 987	Chip 27K ohm	RM73B--273JT
R230	247 0005 905	Chip 100 ohm	RM73B--101JT
R231	247 0014 967	Chip 1M ohm	RM73B--105JT
R232	247 0010 929	Chip 15K ohm	RM73B--153JT
R233	247 0009 901	Chip 4.7K ohm	RM73B--472JT
R234	247 0008 928	Chip 2.2K ohm	RM73B--222JT
R235	247 0009 985	Chip 10K ohm	RM73B--103JT
R236	247 0009 956	Chip 7.5K ohm	RM73B--752JT
R237	247 0010 929	Chip 15K ohm	RM73B--153JT
R238	247 0012 969	Chip 150K ohm	RM73B--154JT
R240	247 0010 987	Chip 27K ohm	RM73B--273JT
R241	247 0008 928	Chip 2.2K ohm	RM73B--222JT
R242	247 0018 905	Chip 0 ohm	RM73B--0R0KT
R304	247 0009 985	Chip 10K ohm	RM73B--103JT
R305	247 0012 927	Chip 100K ohm	RM73B--104JT
R306	247 0007 945	Chip 1K ohm	RM73B--102JT
R307	247 0010 961	Chip 22K ohm	RM73B--223JT
R310	247 0015 940	Chip 2.2M ohm	RM73B--225JT
R311	247 0011 944	Chip 47K ohm	RM73B--473JT
R312	247 0015 940	Chip 2.2M ohm	RM73B--225JT
R313	247 0007 945	Chip 1K ohm	RM73B--102JT
R315	247 0010 929	Chip 15K ohm	RM73B--153JT
R316	247 0010 974	Chip 24K ohm	RM73B--243JT
R318	247 0007 958	Chip 1.1K ohm	RM73B--112JT
R319	247 0008 928	Chip 2.2K ohm	RM73B--222JT
R320	247 0009 901	Chip 4.7K ohm	RM73B--472JT
R321	247 0008 902	Chip 1.8K ohm	RM73B--182JT
R322	247 0009 985	Chip 10K ohm	RM73B--103JT
R323	247 0009 901	Chip 4.7K ohm	RM73B--472JT
R326	247 0012 927	Chip 100K ohm	RM73B--104JT
R327	247 0012 927	Chip 100K ohm	RM73B--104JT
R328, 329	247 0001 983	Chip 4.7 ohm	RM73B--4R7KT
R330	247 0012 927	Chip 100K ohm	RM73B--104JT
R331	247 0010 961	Chip 22K ohm	RM73B--223JT
R332	247 0010 945	Chip 18K ohm	RM73B--183JT
R333	247 0012 927	Chip 100K ohm	RM73B--104JT
R334	247 0010 961	Chip 22K ohm	RM73B--223JT
R335	247 0015 940	Chip 2.2M ohm	RM73B--225JT
R336	247 0015 940	Chip 2.2M ohm	RM73B--225JT
R337	247 0009 985	Chip 10K ohm	RM73B--103JT
R338	247 0010 961	Chip 22K ohm	RM73B--223JT
R339	247 0009 901	Chip 4.7K ohm	RM73B--472JT
R341	247 1012 968	Chip 150K ohm	RM73B2B154JT
R342	247 1011 969	Chip 56K ohm	RM73B2B563JT
R343	247 1011 985	Chip 68K ohm	RM73B2B683JT
R344	247 1012 942	Chip 120K ohm	RM73B2B124JT
R345	247 1011 985	Chip 68K ohm	RM73B2B683JT
R346	247 1013 967	Chip 390K ohm	RM73B2B394JT
R351	247 1012 955	Chip 130K ohm	RM73B2B134JT
R352	247 1011 956	Chip 51K ohm	RM73B2B513JT
R353	247 1011 943	Chip 47K ohm	RM73B2B473JT

Ref. No.	Part No.	Part Name	Remarks
R354	247 1012 968	Chip 150K ohm	RM73B2B154JT
R355	247 1011 969	Chip 56K ohm	RM73B2B563JT
R356	247 1012 900	Chip 82K ohm	RM73B2B823JT
R361	247 1012 971	Chip 160K ohm	RM73B2B164JT
R362	247 1012 900	Chip 82K ohm	RM73B2B823JT
R363	247 1012 955	Chip 130K ohm	RM73B2B134JT
R364	247 1012 913	Chip 91K ohm	RM73B2B913JT
R365	247 1011 969	Chip 56K ohm	RM73B2B563JT
R366	247 1011 943	Chip 47K ohm	RM73B2B473JT
R371	247 1011 930	Chip 43K ohm	RM73B2B433JT
R372	247 1011 969	Chip 56K ohm	RM73B2B563JT
R373	247 1010 999	Chip 30K ohm	RM73B2B303JT
R374	247 1011 972	Chip 62K ohm	RM73B2B623JT
R375	247 1011 943	Chip 47K ohm	RM73B2B473JT
R376	247 1012 971	Chip 160K ohm	RM73B2B164JT
R381	247 1012 955	Chip 130K ohm	RM73B2B134JT
R382	247 1011 972	Chip 62K ohm	RM73B2B623JT
R383	247 1011 943	Chip 47K ohm	RM73B2B473JT
R384	247 1012 926	Chip 100K ohm	RM73B2B104JT
R385	247 1010 999	Chip 30K ohm	RM73B2B303JT
R386	247 1013 909	Chip 220K ohm	RM73B2B224JT
R391	247 1011 972	Chip 62K ohm	RM73B2B623JT
R392	247 1012 926	Chip 100K ohm	RM73B2B104JT
R393	247 1011 969	Chip 56K ohm	RM73B2B563JT
R394	247 1011 943	Chip 47K ohm	RM73B2B473JT
R395	247 1011 969	Chip 56K ohm	RM73B2B563JT
R396	247 1012 926	Chip 100K ohm	RM73B2B104JT
R501	247 0009 914	Chip 5.1K ohm	RM73B--512JT
R502	247 0009 901	Chip 4.7K ohm	RM73B--472JT
R503	247 0012 927	Chip 100K ohm	RM73B--104JT
R510	247 0009 985	Chip 10K ohm	RM73B--103JT
R511	247 1009 984	Chip 10K ohm	RM73B2B103JT
R512	247 0010 961	Chip 22K ohm	RM73B--223JT
R513	247 1009 984	Chip 10K ohm	RM73B2B103JT
R514	247 0009 985	Chip 10K ohm	RM73B--103JT
R518	247 0009 985	Chip 10K ohm	RM73B--103JT
R521	247 0009 985	Chip 10K ohm	RM73B--103JT
R523	247 0009 985	Chip 10K ohm	RM73B--103JT
R524	247 0012 943	Chip 120K ohm	RM73B--124JT
R525	247 0012 943	Chip 120K ohm	RM73B--124JT
R530	247 0009 985	Chip 10K ohm	RM73B--103JT
R531	247 0012 927	Chip 100K ohm	RM73B--104JT
R532	247 0009 985	Chip 10K ohm	RM73B--103JT
R533	247 0007 945	Chip 1K ohm	RM73B--102JT
R541	247 0009 985	Chip 10K ohm	RM73B--103JT
R542 ~548	247 0010 958	Chip 20K ohm	RM73B--203JT
R551	247 0009 914	Chip 5.1K ohm	RM73B--512JT
R552	247 0009 901	Chip 4.7K ohm	RM73B--472JT
R553	247 0012 927	Chip 100K ohm	RM73B--104JT
R574	247 0012 943	Chip 120K ohm	RM73B--124JT
R575	247 1012 942	Chip 120K ohm	RM73B2B124JT
R580	247 0009 985	Chip 10K ohm	RM73B--103JT
R581	247 0012 927	Chip 100K ohm	RM73B--104JT
R582	247 1009 984	Chip 10K ohm	RM73B2B103JT
R583	247 0007 945	Chip 1K ohm	RM73B--102JT
R610 ~616	247 0009 985	Chip 10K ohm	RM73B--103JT
R617, 620~627	247 0012 927	Chip 100K ohm	RM73B--104JT
R660	247 0009 985	Chip 10K ohm	RM73B--103JT
R661	247 0009 985	Chip 10K ohm	RM73B--103JT
R663	247 1009 984	Chip 10K ohm	RM73B--103JT
R668	247 1009 975	Chip 200 ohm	RM73B2B201JT
R950	247 0012 927	Chip 100K ohm	RM73B--104JT
RA502	246 2060 026	Resistor Array 100K ohm ×6	RK99=2B104JP6

Ref. No.	Part No.	Part Name	Remarks
CAPACITORS GROUP			
C101	257 0006 943	Chip 560p/50V	CC73SL1H561JT
C102	257 0008 941	Chip 470p/50V	CK73B1H471KT
C104	257 0008 983	Chip 0.001µ/50V	CK73B1H102KT
C105	257 0004 961	Chip 100p/50V	CC73SL1H101JT
C106	254 4250 929	Electrolytic 100µ/6.3V	CE04W0J101MT
C107	255 1256 903	Film 0.0075µ/50V	CQ92M1H752JT
C108	254 4258 905	Electrolytic 4.7µ/35V	CE04W1V4R7MT
C109	257 0005 902	Chip 150p/50V	CC73SL1H151JT
C110	255 1213 904	Film 0.012µ/50V	CQ93M1H123JT
C111	255 1205 909	Film 0.0027µ/50V	CQ93M1H272JT
C112 ~114	255 1204 900	Film 0.0022µ/50V	CQ93M1H222JT
C115, 116	254 4260 906	Electrolytic 0.1µ/50V	CE04W1H0R1MT
C117	254 4258 921	Electrolytic 22µ/35V	CE04W1V220MT
C118	254 4254 909	Electrolytic 10µ/16V	CE04W1C100MT
C119	254 4258 905	Electrolytic 4.7µ/35V	CE04W1V4R7MT
C120	257 0008 909	Chip 220p/50V	CK73B1H221KT
C121	254 4260 951	Electrolytic 2.2µ/50V	CE04W1H2R2MT
C122	254 4260 948	Electrolytic 1µ/50V	CE04W1H010MT
C123	254 4260 935	Electrolytic 0.47µ/50V	CE04W1HR47MT
C124	254 4260 964	Electrolytic 3.3µ/50V	CE04W1H3R3MT
C125	254 3056 933	Electrolytic 3.3µ/50V (BP)	CE04D1H3R3BPT
C126	257 0005 902	Chip 150p/50V	CC73SL1H151JT
C127	257 0011 941	Chip 0.022µ/25V	CK73B1E223KT
C128	257 0011 967	Chip 0.033µ/25V	CK73B1E333KT
C129	253 1131 909	Ceramic 390p/500V	CK45B2H391KT
C130	257 0004 961	Chip 100p/50V	CC73SL1H101JT
C131	257 0010 900	Chip 0.01µ/50V	CK73B1H103KT
C132	257 0008 996	Chip 0.0012µ/50V	CK73B1H122KT
C133	254 3056 917	Electrolytic 1µ/50V (BP)	CE04D1H010BPT
C201	257 0006 943	Chip 560/50V	CC73SL1H561JT
C202	257 0008 941	Chip 470p/50V	CK73B1H471KT
C204	257 0008 983	Chip 0.001µ/50V	CK73B1H102KT
C205	257 0004 961	Chip 100p/50V	CC73SL1H101JT
C206	254 4250 929	Electrolytic 100µ/6.3V	CE04W0J101MT
C207	255 1256 903	Film 0.0075µ/50V	CQ92M1H752JT
C208	254 4258 905	Electrolytic 4.7µ/35V	CE04W1V4R7MT
C209	257 0005 902	Chip 150p/50V	CC73SL1H151JT
C210	255 1213 904	Film 0.012µ/50V	CQ93M1H123JT
C211	255 1205 909	Film 0.0027µ/50V	CQ93M1H272JT
C212	255 1204 900	Film 0.0022µ/50V	CQ93M1H222JT
C215, 216	254 4260 906	Electrolytic 0.1µ/50V	CE04W1H0R1MT
C217	254 4258 921	Electrolytic 22µ/35V	CE04W1V220MT
C218	254 4254 909	Electrolytic 10µ/16V	CE04W1C100MT
C219	254 4258 905	Electrolytic 4.7µ/35V	CE04W1V4R7MT
C220	257 0008 909	Chip 220p/50V	CK73B1H221KT
C221	254 4260 951	Electrolytic 2.2µ/50V	CE04W1H2R2MT
C222	254 4260 948	Electrolytic 1µ/50V	CE04W1H010MT
C223 ~224	254 4260 935	Electrolytic 0.47µ/50V	CE04W1HR47MT
C224	254 4260 964	Electrolytic 3.3µ/50V	CE04W1H3R3MT
C225	254 3056 933	Electrolytic 3.3µ/50V (BP)	CE04D1H3R3BPT
C226	257 0005 902	Chip 150p/50V	CC73SL1H151JT
C227	257 0011 941	Chip 0.022µ/25V	CK73B1E223KT
C228	257 0011 967	Chip 0.033µ/25V	CK73B1E333KT
C229	253 1131 909	Ceramic 390p/500V	CK45B2H391KT
C230	257 0004 961	Chip 100p/50V	CC73SL1H101JT
C231	257 0010 900	Chip 0.01µ/50V	CK73B1H103KT
C232	257 0008 996	Chip 0.0012µ/50V	CK73B1H122KT
C233	254 3056 917	Electrolytic 1µ/50V (BP)	CE04D1H010BPT
C302	257 0008 983	Chip 0.001µ/50V	CK73B1H102KT
C303	257 0010 900	Chip 0.01µ/50V	CK73B1H103KT
C304	254 4252 930	Electrolytic 100µ/10V	CE04W1A101MT
C305, 306	254 4252 927	Electrolytic 47µ/10V	CE04W1A470MT
C307 ~310	254 4254 909	Electrolytic 10µ/16V	CE04W1C100MT
C312	257 0010 900	Chip 0.01µ/50V	CK73B1H103KT
C313	257 1011 982	Chip 0.047µ/50V	CK73B1H473KT
C314	257 0002 921	Chip 10/50V	CC73SL1H100DT
C315 ~318	254 4254 909	Electrolytic 10µ/16V	CE04W1C100MT
C319	254 4256 949	Electrolytic 100µ/25V	CE04W1E101MT
C320, 321	257 0009 924	Chip 0.0022µ/50V Chip	CK73B1H222KT
C322	257 0010 900	Chip 0.01µ/50V	CK73B1H103KT
C323	257 0009 979	Chip 0.0056µ/50V	CK73B1H562KT
C324	255 4120 900	Film 0.0068µ/100V	CQ93P2A682JT
C325	254 4260 906	Electrolytic 0.1µ/50V	CE04W1H0R1MT
C501	254 4260 964	Electrolytic 3.3µ/50V	CE04W1H3R3MT
C502	254 4260 951	Electrolytic 2.2µ/50V	CE04W1H2R2MT
C503	257 1013 977	Chip 0.068µ/25V	CK73B1E683KT
C542 ~548	257 0008 983	Chip 0.001µ/50V	CK73B1H102KT
C660	257 0008 983	Ceramic 0.001µ/50V	CK73B1H102KT
C902, 903	254 4403 718	Electrolytic 1000µ/25V	CE04W1E102MC
C904, 905	254 4252 930	Electrolytic 100µ/10V	CE04W1A101MT
C906, 907	253 9031 917	Ceramic 0.068µ/25V	CK45=1E683KT
C908	254 4403 721	Electrolytic 2200µ/25V	CE04W1E222MC
C909	254 4403 734	Electrolytic 4700µ/25V	CE04W1E472MC
C910	254 4250 796	Electrolytic 4700µ/6.3V	CE04W0J472MC
C911	253 9031 917	Ceramic 0.068µ/25V	CK45=1E683KT
C913	254 4414 707	Electrolytic 470µ/50V	CE04W1H471MC
C914	254 4258 947	Electrolytic 47µ/35V	CE04W1V470MT
C915	254 4258 950	Electrolytic 100µ/35V	CE04W1V101MT
C916	254 4256 952	Electrolytic 220µ/25V	CE04W1E221MT
C917	254 4256 907	Electrolytic 10µ/25V	CE04W1E100MT
C918	259 0007 715	Electrolytic 4700µ	SB CAP==472=C
C922	254 4260 964	Electrolytic 3.3µ/50V	CE04W1H3R3MT
OTHER PARTS			
XT501	399 0107 007	Ceramic Oscillator	CST4.19MGW
L101	235 0020 945	INDUCTOR	
L102	232 0109 003	MPX FILTER	
L103	235 0020 945	INDUCTOR	
L104	239 0010 009	HX STEP UP COIL	
L202	232 0109 003	MPX FILTER	
L203	235 0020 945	INDUCTOR	
L204	239 0010 009	HX STEP UP COIL	
L301	232 0153 004	OSC COIL	
SW501 ~519	212 4388 907	TACT SWITCH	
SW520	212 1039 000	1P PUSH SWITCH	POWER
FL501	393 4147 007	FL TUBE	FIP7YM6
JK301	204 8261 003	4P PIN JACK	LINE IN, OUT
JK302	204 8264 026	HEAD PHONE JACK	HEAD PHONE
JK303	204 8416 007	MINI JACK	CD SYNCRO.
CN121	205 0610 011	27P FFC CONNECTOR BASE	
CN131	205 0343 032	3P CONNECTOR BASE (KR-PH)	
CN141, 142	205 0343 032	3P CONNECTOR BASE (KR-PH)	
CN191	205 0711 075	7P TBG CONNECTOR BASE	
CN221	205 0355 091	9P KR CONNECTOR BASE (L)	
CN221	204 2228 013	9P KR-DS CONNECTOR CORD	
CN222	205 0343 032	3P CONNECTOR BASE (KR-PH)	
CN222	203 4580 031	3P KR-DA CONNECTOR CORD	
CN231	205 0553 013	11P TRAP CONNECTOR BASE	
CN241	205 0741 003	13P TRAP CONNECTOR BASE	

PARTS LIST OF 3U-2484 POWER SUPPLY UNIT

Ref. No.	Part No.	Part Name	Remarks
CN191	205 0711 075	7P TBG CONNECTOR BASE	
	205 0581 001	2P VH CONNECTOR BASE	
⚠	233 6985 005	POWER TRANSFORMER	Europe U.K. Australia
⚠	233 5758 009	POWER TRANSFORMER	U.S.A. Canada
⚠	233 5760 000	POWER TRANSFORMER	Multi. Voltage (Asia)

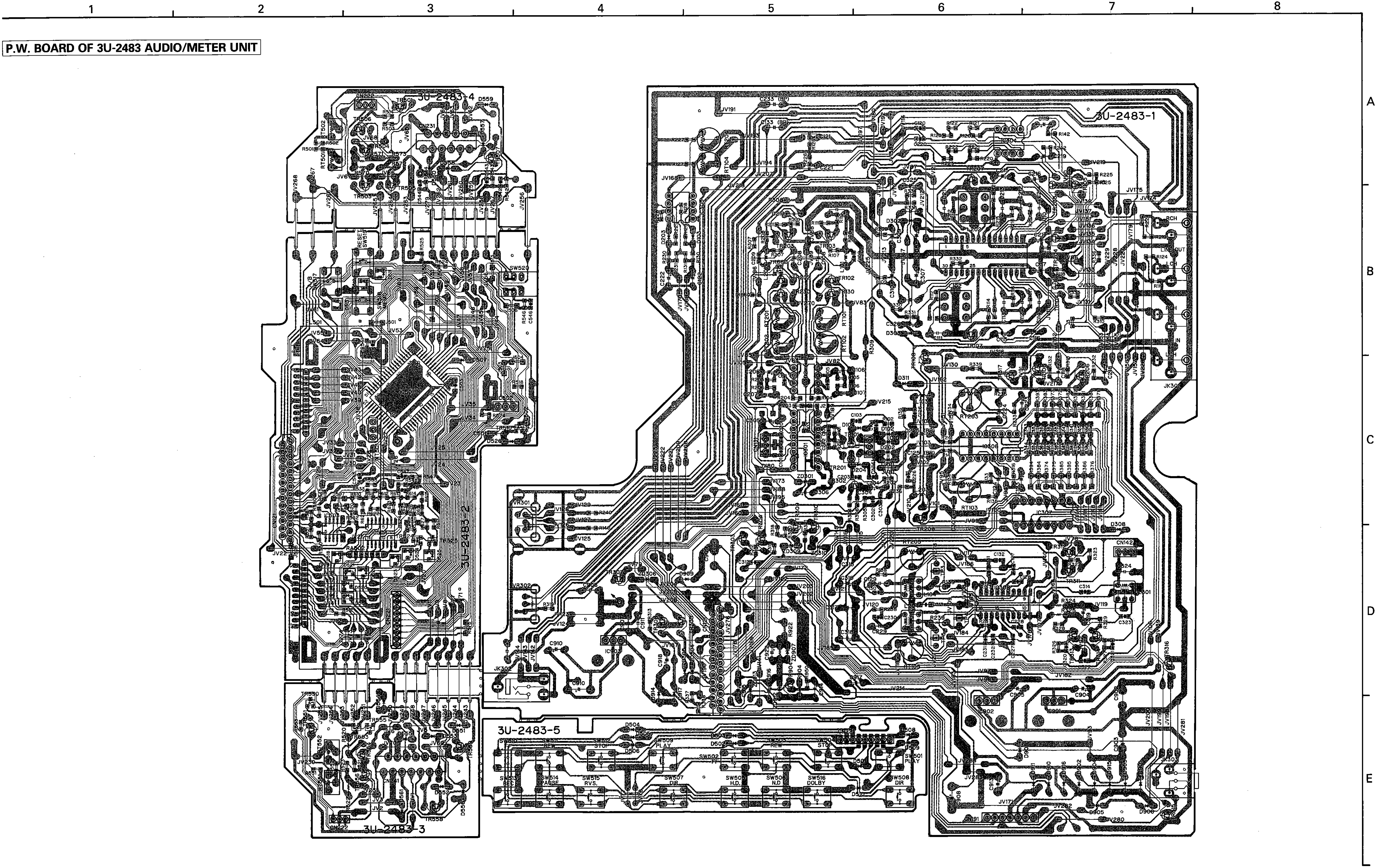
WARNING:

- Parts marked with ⚠ and/or shading have special characteristics important to sefty.

PARTS LIST OF PACKING & ACCESSORIES

Ref. No.	Part No.	Part Name	Remarks
	504 0092 060	STYRENE PAPER	AC CORD
	505 0131 050	CABINET COVER	
	505 0038 030	POLY COVER	
	503 0704 106	PACKING ASS'Y	
	501 1630 008	CARTON CASE	
	511 2372 100	INST. MANUAL (8)	Europe Canada
	511 2373 109	INST. MANUAL	U.S.A. U.K. Australia Multi. Voltage
	203 2223 002	2P PIN CORD	
	203 4880 003	3P MINI PLUG CORD	
	515 0455 005	TAPE CATALOG	Europe U.S.A. Only
⚠	203 3667 007	PLUG ADAPTER	Multi. Voltage Models Only
	513 9111 001	COLOR LABEL (GOLD)	Gold Models Only

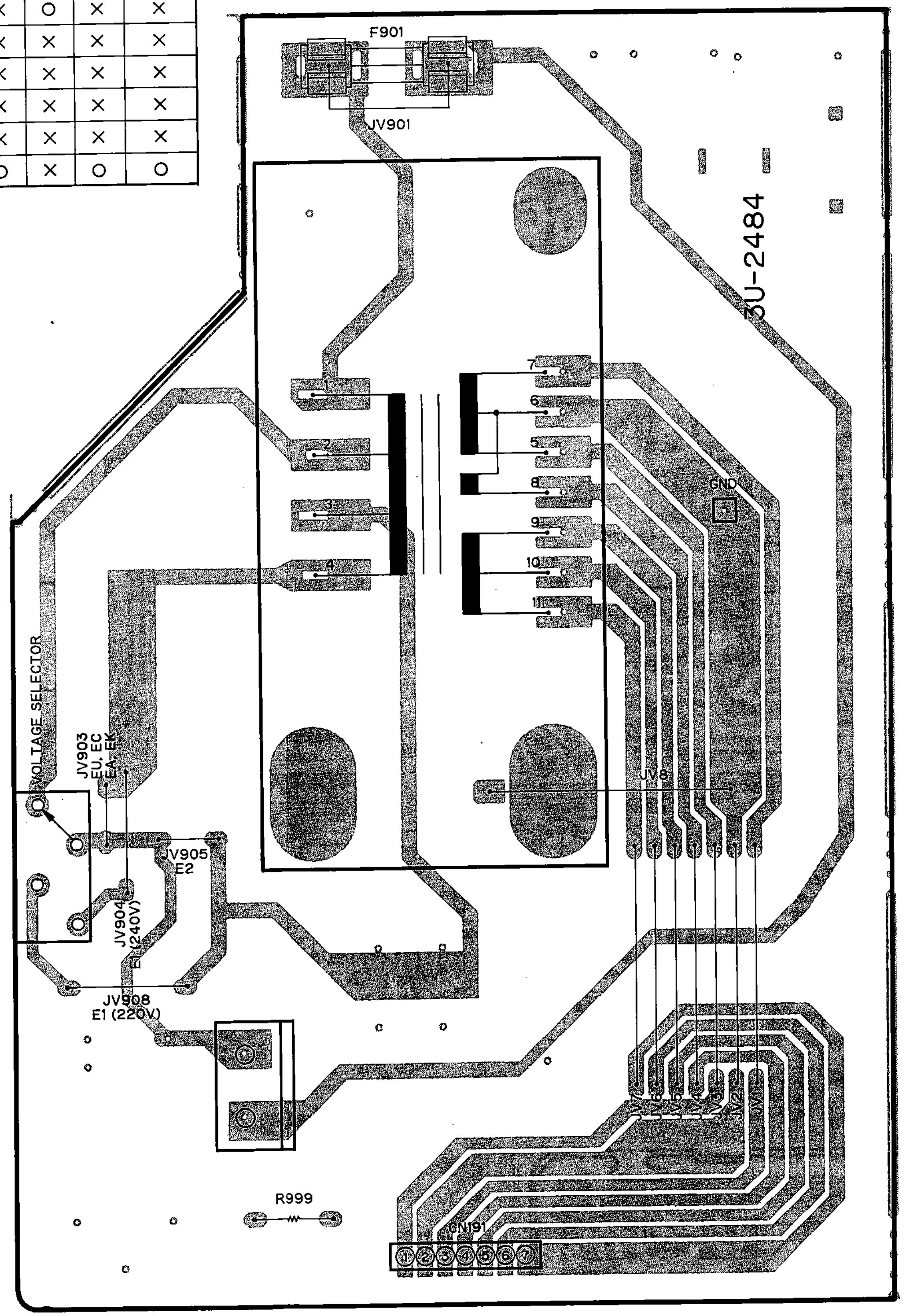
P.W. BOARD OF 3U-2483 AUDIO/METER UNIT


1
2
3
4
5
6
7
8
A
B
C
D
E
3U-2483-1
3U-2483-2
3U-2483-3
3U-2483-4
3U-2483-5
RCH
LINE OUT
LCH
RCH
LINE IN
LCH
JK301
JK302
JK303
VR301
VR302
CN142
CN221
CN222
CN231
RESET SW519
SW520
SW510 REC
SW511 REW
SW512 STOP
SW509 PLAY
SW503 REW
SW505 STOP
SW502 FF
SW501 PLAY
SW513 REC
SW514 PAUSE
SW515 RVS.
SW507 DIR
SW504 H.D
SW506 N.D
SW516 DOLBY
SW508 DIR
IC301
IC302
IC303
IC306
IC307
RT101
RT102
RT103
RT104
RT203

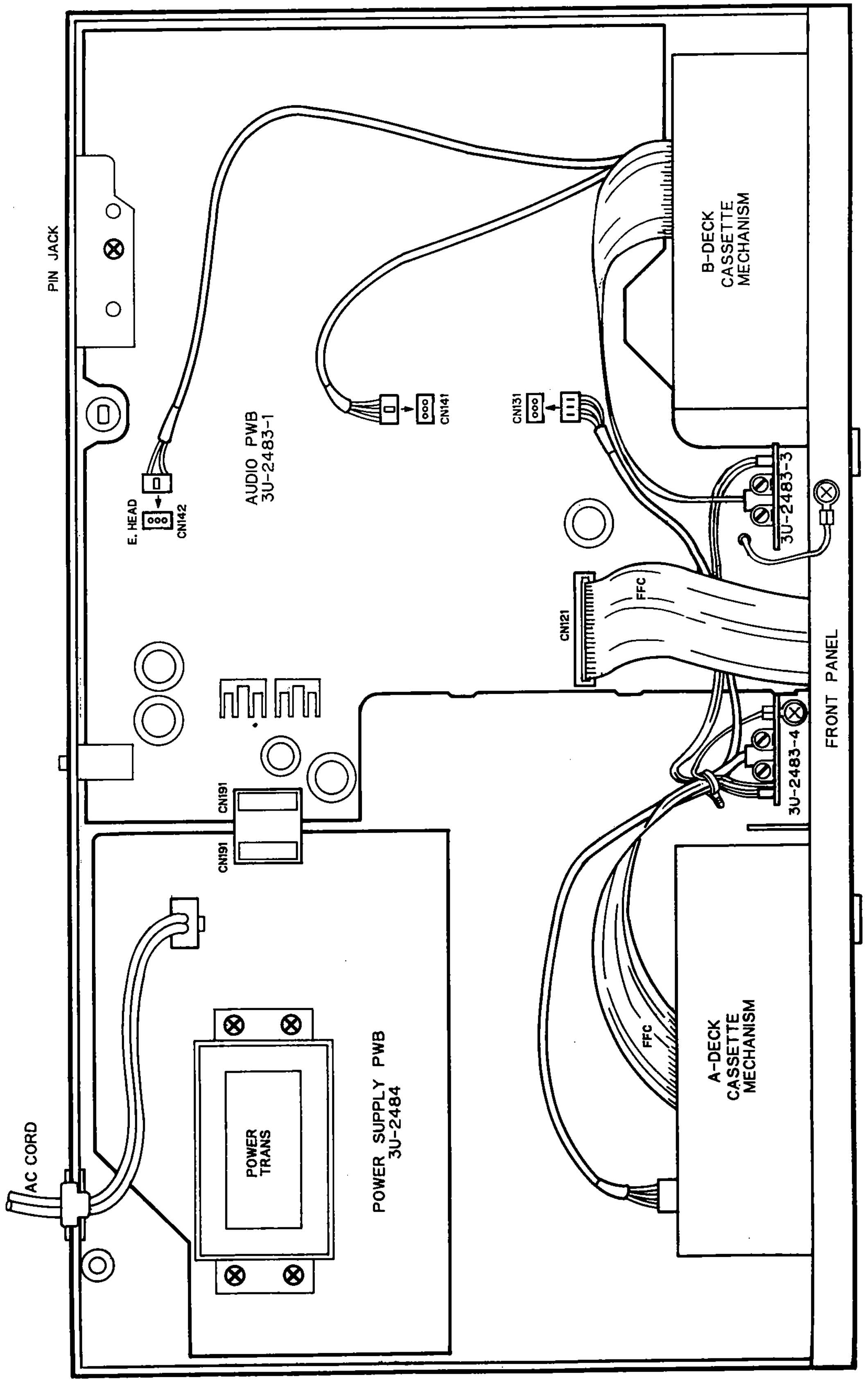
P.W. BOARD OF 3U-2484 POWER SUPPLY UNIT

Parts used marked ○ Parts not used ×

Models \ PARTS	JV901	F901	JV903	JV904	JV905	JV908	Voltage Selector
Europe	○	×	×	×	○	×	×
U. K.	○	×	○	×	×	×	×
U. S. A.	○	×	○	×	×	×	×
Canada	○	×	○	×	×	×	×
Australia	○	×	○	×	×	×	×
Mult. Voltage (Asia)	×	○	×	○	×	○	○

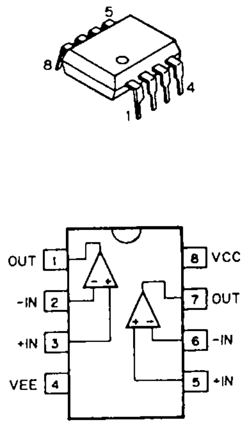

1
2
3
4
A
B
C
D
E
F901
JV901
3U-2484
7
6
5
8
9
10
11
1
2
3
4
GND
VOLTAGE SELECTOR
JV903
EU, EC
EA, EK
JV905
E2
JV904
E1 (240V)
JV908
E1 (220V)
JV8
R999
CN191
1
2
3
4
5
6
7

BUNDLEDIAGRAM

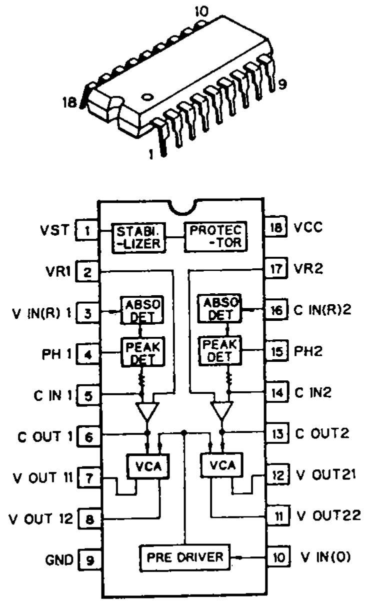

PIN JACK
AUDIO PWB
3U-2483-1
E. HEAD
CN142
CN141
CN131
B-DECK
CASSETTE
MECHANISM
3U-2483-3
FFC
CN121
FRONT PANEL
3U-2483-4
CN191
CN191
A-DECK
CASSETTE
MECHANISM
FFC
POWER SUPPLY PWB
3U-2484
POWER
TRANS
AC CORD

SEMICONDUCTORS

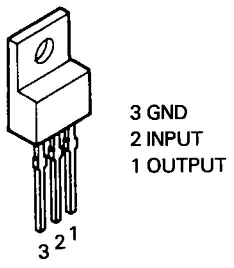
• IC


5
8
1
4
OUT 1
-IN 2
+IN 3
VEE 4
8 VCC
7 OUT
6 -IN
5 +IN

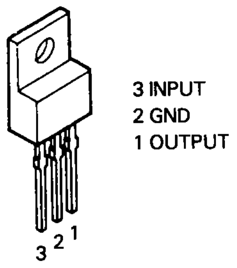
- M5218AP
- M5220P
- BA15218
- BA10393
- UPC4570C


10
18
9
1
VST 1
VR1 2
V IN(R) 1 3
PH 1 4
C IN 1 5
C OUT 1 6
V OUT 11 7
V OUT 12 8
GND 9
18 VCC
17 VR2
16 C IN(R)2
15 PH2
14 C IN2
13 C OUT2
12 V OUT21
11 V OUT22
10 V IN(O)
STABI. -LIZER
PROTEC -TOR
ABSO DET
PEAK DET
VCA
PRE DRIVER

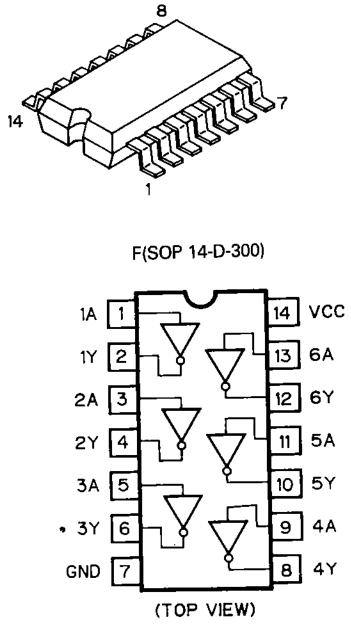
- µPC1297CA


3 GND
2 INPUT
1 OUTPUT
3 2 1

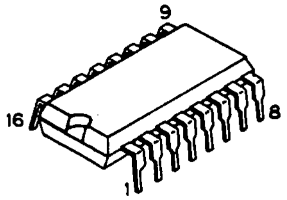
- MC7908


3 INPUT
2 GND
1 OUTPUT
3 2 1

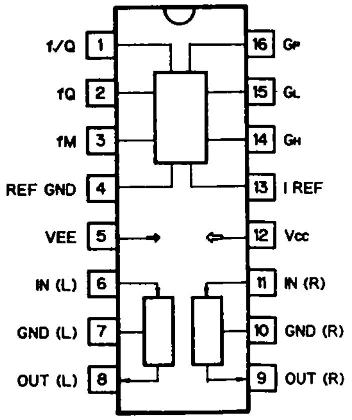
- MC7808
- MC7806CT


8
14
7
1
F(SOP 14-D-300)
1A 1
1Y 2
2A 3
2Y 4
3A 5
3Y 6
GND 7
14 VCC
13 6A
12 6Y
11 5A
10 5Y
9 4A
8 4Y
(TOP VIEW)

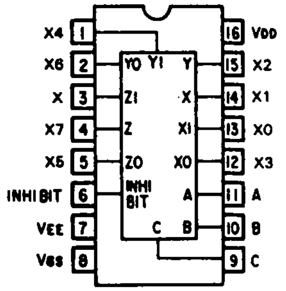
- TC74HCV04AP



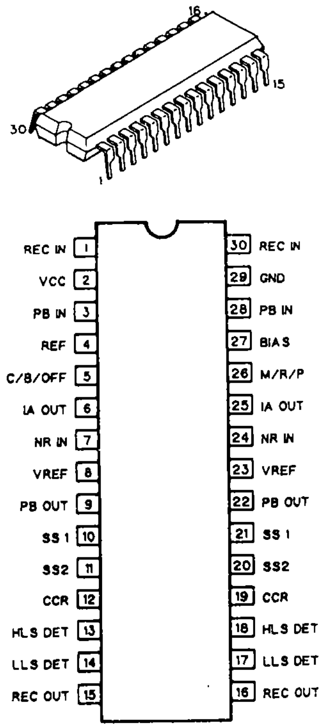
- CXA1198AP
- HD14051BP


1/Q 1
fQ 2
fM 3
REF GND 4
VEE 5
IN (L) 6
GND (L) 7
OUT (L) 8
16 GP
15 GL
14 GH
13 I REF
12 Vcc
11 IN (R)
10 GND (R)
9 OUT (R)

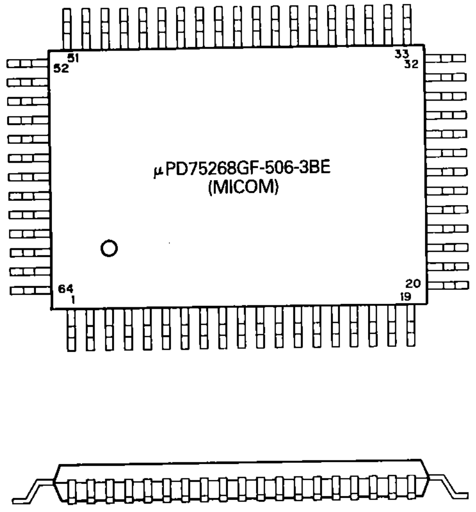
- CXA1198AP


X4 1
X6 2
X 3
X7 4
X5 5
INHIBIT 6
VEE 7
VSS 8
16 VDD
15 X2
14 X1
13 XO
12 X3
11 A
10 B
9 C
YO YI Y
ZI X
Z XI
ZO XO
INHI BIT A
C B

- HD14051BP

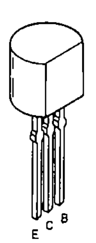

16
15
30
1
REC IN 1
VCC 2
PB IN 3
REF 4
C/B/OFF 5
IA OUT 6
NR IN 7
VREF 8
PB OUT 9
SS 1 10
SS2 11
CCR 12
HLS DET 13
LLS DET 14
REC OUT 15
30 REC IN
29 GND
28 PB IN
27 BIAS
26 M/R/P
25 IA OUT
24 NR IN
23 VREF
22 PB OUT
21 SS 1
20 SS2
19 CCR
18 HLS DET
17 LLS DET
16 REC OUT

- HA12170NT

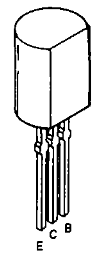

51
52
33
32
64
1
20
19
µPD75268GF-506-3BE
(MICOM)

- µ PD75268GF-506-3BE
(µCOM)

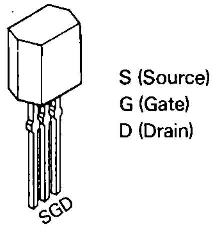
• Transistors



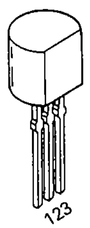
- 2SA933
- 2SC2603
- 2SK373



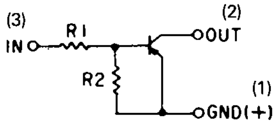
- 2SB562


S (Source)
G (Gate)
D (Drain)
SGD

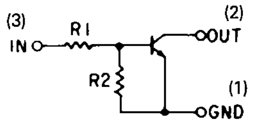
- 2SK184



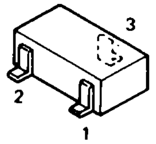
1: GND/Emitter
2: OUT/Collector
3: IN/Base


(3)
IN
R1
R2
(2)
OUT
(1)
GND(+)

- DTA114ES
- DTA143ES
- DTA144ES
- DTA144WS

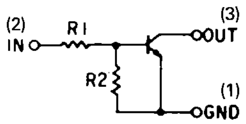

(3)
IN
R1
R2
(2)
OUT
(1)
GND

- DTC114ES
- DTC114TS
- DTC124ES
- DTC124XS
- DTC143ES
- DTC144ES
- DTC144WS

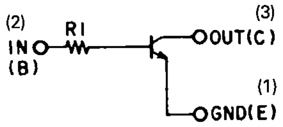


1: GND/Emitter
2: In/Base
3: Out/Collector

- MA151A

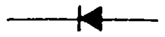

(2)
IN
R1
R2
(3)
OUT
(1)
GND

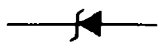
- DTC124EK
- DTC144EK


(2)
IN
(B)
R1
(3)
OUT(C)
(1)
GND(E)

- DTC114TK

• Diodes

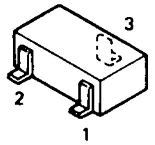


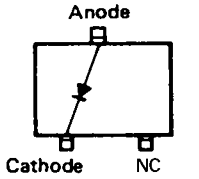


- IS2076A
- ISS270A
- ISR35-200A

- HZS5C-1
- HZS2C-1
- HZS6A-7
- HZS9B-1

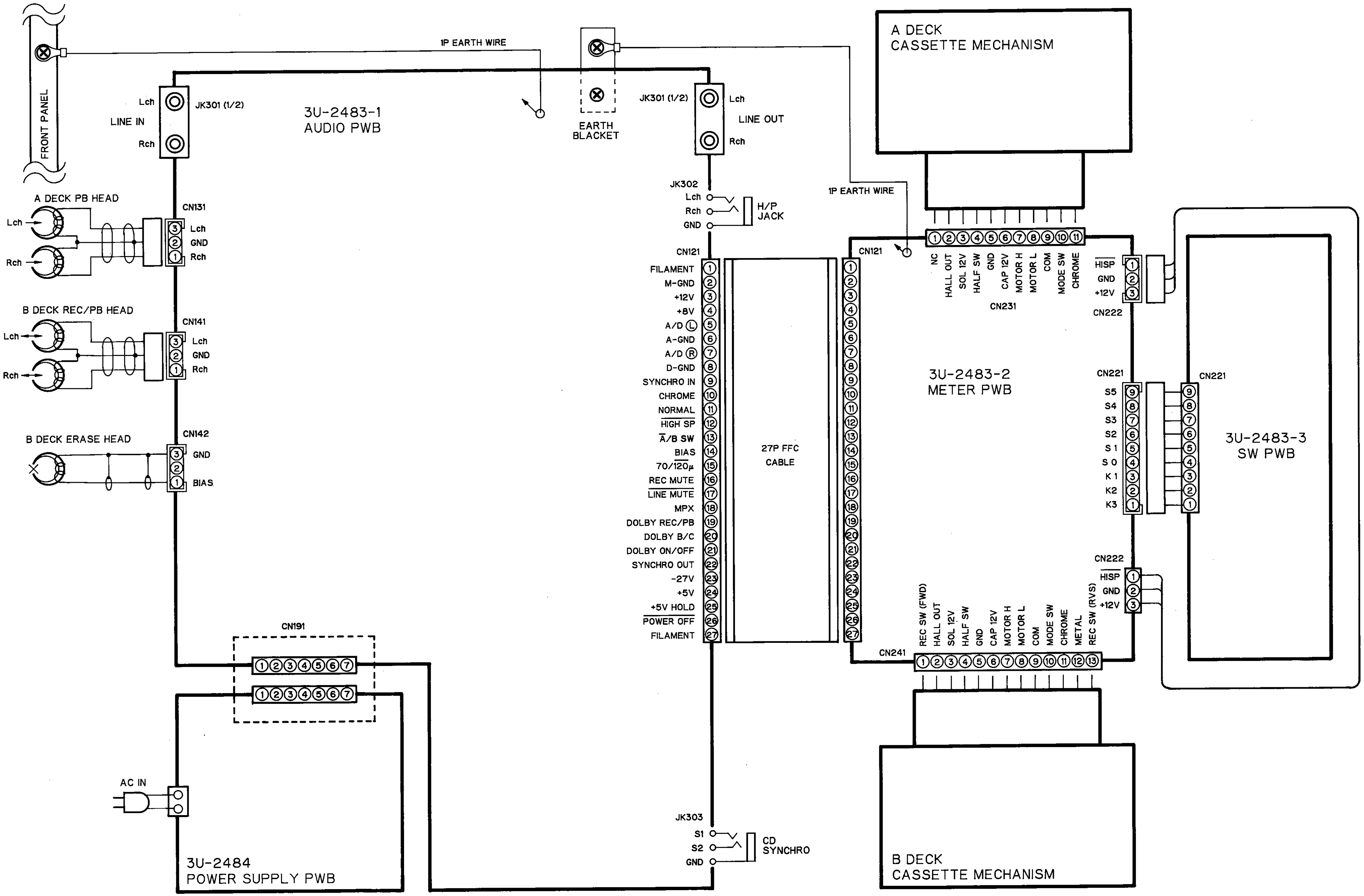
- HZS9A-1
- HZS27-1



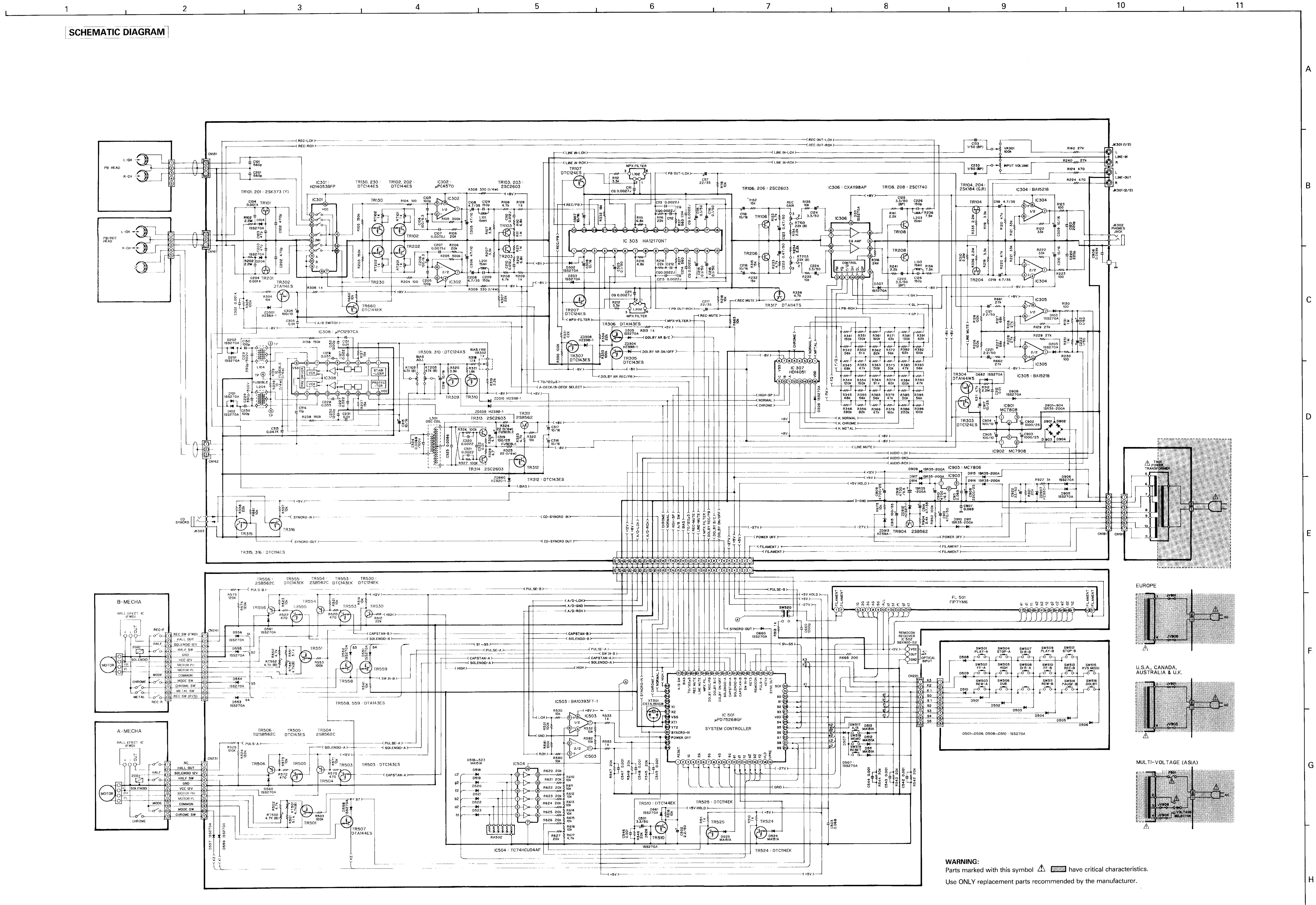

Anode
Cathode
NC

1 : Cathode
2 : Cathode
3 : Anode

WIRING DIAGRAM


FRONT PANEL
1P EARTH WIRE
EARTH BLACKET
A DECK CASSETTE MECHANISM
LINE IN
Lch
Rch
JK301 (1/2)
3U-2483-1 AUDIO PWB
JK301 (1/2)
Lch
LINE OUT
Rch
JK302
Lch
Rch
GND
H/P JACK
1P EARTH WIRE
A DECK PB HEAD
Lch
Rch
CN131
Lch
GND
Rch
B DECK REC/PB HEAD
Lch
Rch
CN141
Lch
GND
Rch
B DECK ERASE HEAD
CN142
GND
BIAS
CN121
FILAMENT
M-GND
+12V
+8V
A/D Ⓛ
A-GND
A/D Ⓡ
D-GND
SYNCHRO IN
CHROME
NORMAL
HIGH SP
A/B SW
BIAS
70/120μ
REC MUTE
LINE MUTE
MPX
DOLBY REC/PB
DOLBY B/C
DOLBY ON/OFF
SYNCHRO OUT
-27V
+5V
+5V HOLD
POWER OFF
FILAMENT
27P FFC CABLE
CN121
NC
HALL OUT
SOL 12V
HALF SW
GND
CAP 12V
MOTOR H
MOTOR L
COM
MODE SW
CHROME
CN231
HISP
GND
+12V
CN222
3U-2483-2 METER PWB
CN221
S5
S4
S3
S2
S1
S0
K1
K2
K3
CN221
3U-2483-3 SW PWB
CN222
HISP
GND
+12V
REC SW (FWD)
HALL OUT
SOL 12V
HALF SW
GND
CAP 12V
MOTOR H
MOTOR L
COM
MODE SW
CHROME
METAL
REC SW (RVS)
CN241
B DECK CASSETTE MECHANISM
CN191
AC IN
3U-2484 POWER SUPPLY PWB
JK303
S1
S2
GND
CD SYNCHRO

SCHEMATIC DIAGRAM



1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
PB HEAD
L-CH
R-CH
PB/REC HEAD
CN131
CN141
CN142
TR101, 201 : 2SK373 (Y)
IC301 : HD14053BFP
TR130, 230 : DTC144ES
TR102, 202 : DTC144ES
IC302 : µPC4570
TR103, 203 : 2SC2603
TR302 DTA114ES
IC308 : µPC1297CA
TR309, 310 : DTC124XS
TR313 2SC2603
TR314 2SC2603
TR311 2SB562
TR312 : DTC143ES
L301 OSC COIL
MPX FILTER
IC 303 HA12170NT
TR107 DTC124ES
TR207 DTC124ES
TR307 DTC143ES
TR305 DTC143ES
TR306 DTA143ES
TR317 DTA114TS
TR106, 206 : 2SC2603
IC306 : CXA1198AP
TR108, 208 : 2SC1740
TR104, 204 : 2SK184 (G,R)
IC304 : BA15218
IC305 : BA15218
IC 307 HD14051
TR304 DTA144WS
TR303 DTC124ES
IC901 MC7808
IC902 MC7908
IC903 : MC7806
TR904 2SB562
VR301 INPUT VOLUME
JK301 (1/2)
JK301 (2/2)
LINE-IN
LINE-OUT
JK302 PHONES JACK
T901 POWER TRANSFORMER
CN191
CN192
SYNCRO
JK303
TR315
TR316
TR315, 316 : DTC114ES
B-MECHA
A-MECHA
HALL EFFECT IC (FWD)
MOTOR
REC-F
REC-R
HALF
SOLENOID
MODE
CHROME
METAL
CN241
CN231
TR556 : 2SB562C
TR555 : DTC143EK
TR554 : 2SB562C
TR553 : DTC143EK
TR530 : DTC124EK
TR558, 559 : DTA143ES
TR506 : 2SB562C
TR505 : DTC143ES
TR504 : 2SB562C
TR503 : DTC143ES
TR507 DTA144ES
IC503 : BA10393FT-1
IC504 : TC74HCU04AF
IC 501 µPD75268GF SYSTEM CONTROLLER
TR510 : DTC144EK
TR525 : DTC114EK
TR524 : DTC114EK
FL 501 FIP7YM6
REMOCON RECEIVER IC 502 SBX1610-52
OPTICAL INPUT
CN221
SW520
D501~D506, D508~D510 : 1SS270A
EUROPE
U.S.A., CANADA, AUSTRALIA & U.K.
MULTI-VOLTAGE (ASIA)
VOLTAGE SELECTOR

WARNING:
Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

DENON

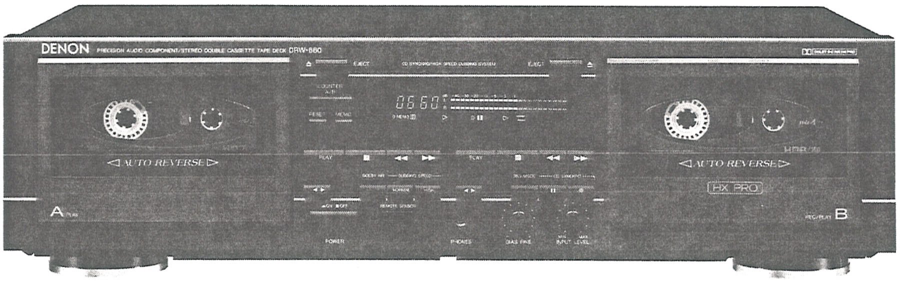
Hi-Fi Component

SUPPLMENT
For □□□76□□□□□

SERVICE MANUAL

MODEL DRW-660

STEREO CASSETTE TAPE DECK


DENON
PRECISION AUDIO COMPONENT/STEREO DOUBLE CASSETTE TAPE DECK DRW-660
EJECT
COUNTER
RESET
MEMO
0560
AUTO REVERSE
HX PRO
A
B
POWER
PHONES
BIAS FINE
INPUT LEVEL

Please use this Supplement when repairing or adjusting products whose serials numbers (on the rear panel) have "76" as the 4th and 5th digits. (□□□ 76 □□□□□)

Since this Supplement contains only those pages which differ from the previously issued DRW-660 Service Manual (back page No. 0314), the Supplement should be used together with the DRW-660 Service Manual whenever repairs and adjustments are being carried out.

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PARTS LIST OF KU-9312 DISPLAY UNIT 2
PARTS LIST OF KU-9313 AUDIO UNIT .... 2~4
PARTS LIST OF KU-9314 POWER UNIT 5
PARTS LIST OF EXPLODED VIEW 6
EXPLODED VIEW 7
P.W.BOARD OF KU-9312 DISPLAY UNIT 8
P.W.BOARD OF KU-9313 AUDIO UNIT 9
P.W.BOARD OF KU-9314 POWER UNIT 10
BUNDLE DIAGRAM 11
WIRING DIAGRAM 12
SCHEMATIC DIAGRAM 13

NIPPON COLUMBIA CO., LTD.

PARTS LIST OF KU-9312 DISPLAY UNIT

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC501	262 1651 205	μ-Computer UPD75268GF-506-3BE	
IC503	263 0620 007	IC BA10393	
IC504	262 1265 002	IC TC74HCU04AP	
IC805	499 0150 008	Remote Sensor SBX1610-52	
TR501	271 0192 905	Transistor 2SA933S(S)	
TR503	269 0018 905	Transistor DTC143ES (4.7K-4.7K)T	Built in Resistor
TR504	272 0025 907	Transistor 2SB562(C)TF	
TR505	269 0018 905	Transistor DTC143ES (4.7K-4.7K)T	Built in Resistor
TR506	272 0025 907	Transistor 2SB562(C)TF	
TR507	269 0093 904	Transistor DTA144ES (47K-47K)T	Built in Resistor
TR510	269 0040 902	Transistor DTC144ES (47K-47K)T	Built in Resistor
TR524, 525	269 0020 906	Transistor DTC114ES (10K-10K)T	Built in Resistor
TR530	269 0062 906	Transistor DTC124ES (22K-22K)T	Built in Resistor
TR551	271 0192 905	Transistor 2SA933S(S)	
TR553	269 0018 905	Transistor DTC143ES (4.7K-4.7K)T	Built in Resistor
TR554	272 0025 907	Transistor 2SB562(C)TF	
TR555	269 0018 905	Transistor DTC143ES (4.7K-4.7K)T	Built in Resistor
TR556	272 0025 907	Transistor 2SB562(C)TF	
TR558, 559	269 0093 904	Transistor DTA144ES (47K-47K)T	Built in Resistor
D501~513	276 0432 903	Diode 1SS270A TE	
D518~526	276 0432 903	Diode 1SS270A TE	
D551~561	276 0432 903	Diode 1SS270A TE	
D661	276 0432 903	Diode 1SS270A TE	
RESISTORS GROUP (not included Carbon Film ±5% 1/4W type)			
RT501, 502	211 8005 021	Adjust 47K ohm	V06QB472
RT551, 552	211 8005 021	Adjust 47K ohm	V06QB472
CAPACITORS GROUP			
C501	254 4260 964	Electolytic 3.3μF/50V	CE04W1H3R3MT SME
C502	254 4260 951	Electolytic 2.2μF/50V	CE04W1H2R2MT SME
C503	253 9031 917	Ceramic 0.068μF/25V	CK45=1E683KT
C542~548	253 9030 905	Ceramic 0.001μF/25V	CK45=1E102KT
C660	253 9030 905	Ceramic 0.001μF/25V	CK45=1E102KT
OTHER PARTS			
SW501~519	212 4388 907	Tact Switch	
SW520	212 1039 000	1P Push Switch	POWER
FL501	393 4147 007	FL Tube	FIP7YM6
XT501	399 0107 007	Ceramic Resonator	CST4.19MGW
CN121-1	205 0610 011	27P FFC Connector Base	
CN221	205 0916 003	9P Connector Socket	
CN231	205 0553 013	11P Trap Connector Base	
CN241	205 0741 003	13P Trap Connector Base	
CW221	205 0535 015	9P Connector Base	

PARTS LIST OF KU-9313 AUDIO UNIT

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC301	262 0419 008	IC HD14053BP	
IC302	262 0864 006	IC UPC4570C	
IC303	263 0720 004	IC HA12170NT	
IC304, 305	263 0565 007	IC BA15218	
IC306	263 0589 009	IC CXA1198AP	
IC307	263 0621 003	IC HD14051BP	
IC308	263 0354 001	IC UPC1297CA	
TR101	275 0042 905	Transistor 2SK373(Y)TPE2	
TR102	269 0040 902	Transistor DTC144ES (47K-47K)T	Built in Resistor
TR103	273 0303 910	Transistor 2SC1740S(S)	
TR104	275 0061 902	Transistor 2SK184(G)/(B)	
TR106	273 0303 910	Transistor 2SC1740S(S)	
TR107	269 0062 906	Transistor DTC124ES (22K-22K)T	Built in Resistor
TR108	273 0303 910	Transistor 2SC1740S(S)	
TR130	269 0040 902	Transistor DTC144ES (47K-47K)T	Built in Resistor
TR201	275 0042 905	Transistor 2SK373(Y)TPE2	
TR202	269 0040 902	Transistor DTC144ES (47K-47K)T	Built in Resistor
TR203	273 0303 910	Transistor 2SC1740S(S)	
TR204	275 0061 902	Transistor 2SK184(G)/(B)	
TR206	273 0303 910	Transistor 2SC1740S(S)	
TR207	269 0062 906	Transistor DTC124ES (22K-22K)T	Built in Resistor
TR208	273 0303 910	Transistor 2SC1740S(S)	
TR230	269 0040 902	Transistor DTC144ES (47K-47K)T	Built in Resistor
TR302	269 0046 906	Transistor DTA114ES (10K-10K)T	Built in Resistor
TR303	269 0062 906	Transistor DTC124ES (22K-22K)T	Built in Resistor
TR304	269 0016 907	Transistor DTA144WS (47K-22K)T	Built in Resistor
TR305	269 0018 905	Transistor DTC143ES (4.7K-4.7K)T	Built in Resistor
TR306	269 0020 904	Transistor DTA143ES (4.7K-4.7K)T	Built in Resistor
TR307	269 0018 905	Transistor DTC143ES (4.7K-4.7K)T	Built in Resistor
TR309, 310	269 0015 908	Transistor DTC124XS (22K-47K)T	Built in Resistor
TR315, 316	269 0020 906	Transistor DTC114ES (10K-10K)T	Built in Resistor
TR317	269 0080 904	Transistor DTA114TS (10K)T	Built in Resistor
TR660	269 0040 902	Transistor DTC144ES (47K-47K)T	Built in Resistor
D101~104	276 0432 903	Diode 1SS270A TE	
D201~204	276 0432 903	Diode 1SS270A TE	
D302	276 0432 903	Diode 1SS270A TE	
D305	276 0432 903	Diode 1SS270A TE	
D307, 308	276 0432 903	Diode 1SS270A TE	
D311	276 0432 903	Diode 1SS270A TE	
D316	276 0432 903	Diode 1SS270A TE	
D662	276 0432 903	Diode 1SS270A TE	
ZD301	276 0461 903	Zener Diode HZS6A-1 TD	
ZD304~306	276 0468 906	Zener Diode HZS9B-1 TD	
ZD309	276 0468 906	Zener Diode HZS9B-1 TD	
RESISTORS GROUP (not included Carbon Film ±5% 1/4W type)			
VR301	211 0707 000	Valiable 100K ohm (INPUT)	V0920V25FA104
VR302	211 0706 001	Valiable 1K ohm	V09V25FB102K
RT101, 102	211 6064 064	Adjust 1K ohm	V06PB102
RT103	211 6064 093	Adjust 22K ohm	V06PB223
RT105	211 6064 019	Adjust 47K ohm	V06PB473

Ref. No.	Part No.	Part Name	Remarks
RT201, 202	211 6064 064	Adjust 1K ohm	V06PB102
RT203	211 6064 093	Adjust 22K ohm	V06PB223
RT205	211 6064 019	Adjust 47K ohm	V06PB473
⚠**R139**	**241 2315 912**	**Carbon (Fusible) 10ohm**	**RD14B2E100GFRST**
⚠**R239**	**241 2315 912**	**Carbon (Fusible) 10ohm**	**RD14B2E100GFRST**
CAPACITORS GROUP			
C101	253 1179 990	Ceramic 560pF/50V	CK45B1H561KT DD-3
C102	253 1179 987	Ceramic 470pF/50V	CK45B1H471KT DD-3
C103	253 4537 966	Ceramic 47pF/50V	CC45SL1H470JT DD-3
C104	253 9030 905	Ceramic 0.001μF/25V	CK45=1E102KT
C105	253 1179 903	Ceramic 100pF/50V	CK45B1H101KT DD-3
C106	254 4250 916	Electolytic 47μF/6.3V	CE04W0J470MT SME
C107	255 1256 903	Film 0.0075μF/50V	CQ93M1H752JT
C108	254 4258 905	Electolytic 4.7μF/35V	CE04W1V4R7MT SME
C109	256 1179 929	Ceramic 150pF/50V	CK45B1H151KT DD-3
C110	255 1213 904	Film 0.012μF/50V	CQ93M1H123JT
C111	255 1205 909	Film 0.0027μF/50V	CQ93M1H272JT
C112~114	255 1204 900	Film 0.0022μF/50V	CQ93M1H222JT
C115, 116	254 4260 906	Electolytic 0.1μF/50V	CE04W1H0R1MT SME
C117	254 4258 921	Electolytic 22μF/35V	CE04W1V220MT SME
C118	254 4254 909	Electolytic 10μF/16V	CE04W1C100MT SME
C119	254 4258 905	Electolytic 4.7μF/35V	CE04W1V4R7MT SME
C120	253 1179 945	Ceramic 220pF/50V	CK45B1H221KT DD-3
C122	254 4260 948	Electolytic 1μF/50V	CE04W1H010MT SME
C123	254 4260 935	Electolytic 0.47μF/50V	CE04W1HR47MT SME
C124	254 4260 964	Electolytic 3.3μF/50V	CE04W1H3R3MT SME
C125	254 3056 933	Electolytic 3.3μF/50V (Bipolar)	CE04D1H3R3MBPT SME
C126	256 1179 929	Ceramic 150pF/50V	CK45B1H151KT DD-3
C127	253 9030 989	Ceramic 0.022μF/25V	CK45=1E223KT
C128	253 9030 992	Ceramic 0.033uF/25V	CK45=1E333KT
⚠**C129**	**253 1131 909**	**Ceramic 390pF/500V**	**CK45B2H391KT**
C130	253 1179 903	Ceramic 100pF/50V	CK45B1H101KT DD-3
C131	253 9030 963	Ceramic 0.01μF/25V	CK45=1E103KT
C132	253 9031 946	Ceramic 0.0012μF/25V	CK45=1E122KT
C133	254 3056 917	Electolytic 1μF/50V (Bipolar)	CE04D1H010MBPT SME
C166	253 1179 932	Ceramic 180pF/50V	CK45B1H181KT DD-3
C169	253 1179 932	Ceramic 180pF/50V	CK45B1H181KT DD-3
C201	253 1179 990	Ceramic 560pF/50V	CK45B1H561KT DD-3
C202	253 1179 987	Ceramic 470pF/50V	CK45B1H471KT DD-3
C203	253 4537 966	Ceramic 47pF/50V	CK45B1H470KT DD-3
C204	253 9030 905	Ceramic 0.001μF/25V	CK45=1E102KT
C205	253 1179 903	Ceramic 100pF/50V	CK45B1H101KT DD-3
C206	254 4250 916	Electolytic 47μF/6.3V	CE04W0J470MT SME
C207	255 1256 903	Film 0.0075μF/50V	CQ93M1H752JT
C208	254 4258 905	Electolytic 4.7μF/35V	CE04W1V4R7MT SME
C209	256 1179 929	Ceramic 150pF/50V	CK45B1H151KT DD-3
C210	255 1213 904	Film 0.012μF/50V	CQ93M1H123JT
C211	255 1205 909	Film 0.0027μF/50V	CQ93M1H272JT
C212~214	255 1204 900	Film 0.0022μF/50V	CQ93M1H222JT
C215, 216	254 4260 906	Electolytic 0.1μF/50V	CE04W1H0R1MT SME
C217	254 4258 921	Electolytic 22μF/35V	CE04W1V220MT SME
C218	254 4254 909	Electolytic 10μF/16V	CE04W1C100MT SME
C219	254 4258 905	Electolytic 4.7μF/35V	CE04W1V4R7MT SME
C220	253 1179 945	Ceramic 220pF/50V	CK45B1H221KT DD-3
C222	254 4260 948	Electolytic 1μF/50V	CE04W1H010MT SME
C223	254 4260 935	Electolytic 0.47μF/50V	CE04W1HR47MT SME
C224	254 4260 964	Electolytic 3.3μF/50V	CE04W1H3R3MT SME
C225	254 3056 933	Electolytic 3.3μF/50V (Bipolar)	CE04D1H3R3MBPT SME
C226	256 1179 929	Ceramic 150pF/50V	CK45B1H151KT DD-3
C227	253 9030 989	Ceramic 0.022μF/25V	CK45=1E223KT
C228	253 9030 992	Ceramic 0.033uF/25V	CK45=1E333KT
⚠**C229**	**253 1131 909**	**Ceramic 390pF/500V**	**CK45B2H391KT**
C230	253 1179 903	Ceramic 100pF/50V	CK45B1H101KT DD-3
C231	253 9030 963	Ceramic 0.01μF/25V	CD45=1E103KT
C232	253 9031 946	Ceramic 0.0012μF/25V	CK45=1E122KT
C233	254 3056 917	Electolytic 1μF/50V (Bipolar)	CE04D1H010MBPT SME
C266	253 1179 932	Ceramic 180pF/50V	CK45B1H181KT DD-3
C269	253 1179 932	Ceramic 180pF/50V	CK45B1H181KT DD-3
C302	253 9030 905	Ceramic 0.001μF/25V	CK45=1E102KT
C304	254 4252 930	Electolytic 100μF/10V	CE04W1A101MC SME
C305, 306	254 4252 927	Electolytic 47μF/10V	CE04W1A470MT SME
C307~310	254 4254 909	Electolytic 10μF/16V	CE04W1C100MT SME
C312	253 9030 963	Ceramic 0.01μF/25V	CK45=1E103KT
C313	253 9031 904	Ceramic 0.047μF/25V	CK45=1E473KT
C314	253 4536 909	Ceramic 10pF/50V	CC45SL1H100DT DD-3
C315, 316	254 4254 909	Electolytic 10μF/16V	CE04W1C100MT SME
C325	254 4260 906	Electolytic 0.1μF/50V	CE04W1H0R1MT SME
C390~392	253 9039 003	Ceramic 0.1μF/25V	CK45=1E104ZDD-3
C906	253 9031 917	Ceramic 0.068μF/25V	CK45=1E683KT
OTHER PARTS			
JK301	204 8261 003	4P Pin Jack	
JK302	204 8264 026	Head Phone Jack	
JK303	204 8461 007	Mini Jack	
L101	235 0020 945	Inductor 153JT	
L102	232 0109 003	MPX Filter	
L103	235 0020 945	Inductor 153JT	
L104	239 0010 009	HX Step up coil	
L201	235 0020 945	Inductor 153JT	
L202	232 0109 003	MPX Filter	
L203	235 0020 945	Inductor 153JT	
L204	239 0010 009	HX Step up coil	
CN121-2	205 0610 011	27P FFC Connector Base	
CN131	205 0343 032	3P PH-SAN Connector Base	
CN141, 142	205 0343 032	3P PH-SAN Connector Base	
CN143	203 5063 007	3P PH-SAN Connector Cord	
CN191	205 0375 055	15P PH-SAN Connector Base	

PARTS LIST OF KU-9314 POWER UNIT

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC901	263 0656 000	IC MC7808CT	
IC902	263 0657 009	IC MC7908CT	
IC903	263 0648 005	IC MC7806CT	
TR311	272 0025 907	Transistor 2SB562(C)TF	
TR312	269 0018 905	Transistor DTC143ES (4.7K-4.7K)T	Built in Resistor
TR313, 314	273 0303 910	Transistor 2SC1740S(S)	
TR904	272 0025 907	Transistor 2SB562(C)TF	
D517, 518	276 0432 903	Diode 1SS270A TE	
D901~904	276 0553 905	Diode 1SR35-200A (T93X)	
D905, 906	276 0432 903	Diode 1SS270A TE	
D908	276 0432 903	Diode 1SS270A TE	
D909~911	276 0553 905	Diode 1SR35-200A (T93X)	
D914~917	276 0553 905	Diode 1SR35-200A (T93X)	
ZD660	276 0451 900	Zener Diode HZS2C-1 TD	
ZD907	276 0460 904	Zener Diode HZS5C-1 TD	
ZD912	276 0482 908	Zener Diode HZS27-1 TD	
ZD913	276 0467 907	Zener Diode HZS9A-1 TD	
RESISTORS GROUP (not included Carbon Film ±5% 1/4W type)			
R324, 325	241 2315 925	Carbon (Fusible) 22ohm	RD14B2E220GFRST
CAPACITORS GROUP			
C317, 318	254 4254 909	Electolytic 10µF/16V	CE4W1C100MT SME
C319	254 4256 949	Electolytic 100µF/25V	CE04W1E101MT SME
C320, 321	253 9030 921	Ceramic 0.0022µF/25V	CK45=1E222IT
C322	253 9030 963	Ceramic 0.01µF/25V	CK45=1E103KT
C323	253 9031 988	Ceramic 0.0056µF/25V	CK45=1E562KT
C324	255 4120 900	Film 0.0068µF/100V	CQ93P2A682JT
C518	254 4250 796	Electolytic 4700µF/6.3V	CE04W0J472MC SME
C902, 903	254 4403 718	Electolytic 1000µF/25V	CE4W1E102MC SMG
C904, 905	254 4252 930	Electolytic 100µF/10V	CE04W1A101MT SME
C906, 907	253 9031 917	Ceramic 0.068µF/25V	CK45=1E683KT
C908	254 4403 721	Electolytic 2200µF/25V	CE04W1E222MC SMG
C909	254 4403 737	Electolytic 4700µF/25V	CE04W1E472MC SME
C910	254 4250 796	Electolytic 4700µF/6.3V	CE04W1E472MC SME
C911	253 9031 917	Ceramic 0.068µF/25V	CK45=1E683KT
C913	254 4414 707	Electolytic 470µF/50V	CE04W1H471MC SMG
C914	254 4258 947	Electolytic 47µF/35V	CE04W1V470MT SME
C915	254 4258 950	Electolytic 100µF/35V	CE04W1V101MT SME
C917	254 4256 907	Electolytic 10µF/25V	CE04W1E100MT SME
C922	254 4261 905	Electolytic 33µF/50V	CE04W1H330MT SME
OTHER PARTS			
SW902	212 4698 008	Voltage Selector (D)	Multi-Voltage only
T901	233 5985 005	Power Transformer	Europe, UK, Australia
T901	233 5758 009	Power Transformer	USA, Canada
T901	233 5760 000	Power Transformer	Multi-Voltage
F901	206 1031 045	Fuse (0.25)A	Multi-Voltage only
	202 0022 008	Fuse Holder	Multi-Voltage only
L301	232 0153 004	OSC Coil	
CN143	205 0343 032	3P Connector Base (KR-PH)	
CW191	204 6512 000	15P PH-SAN Connector Cord	

PARTS LIST OF EXPLODED VIEW

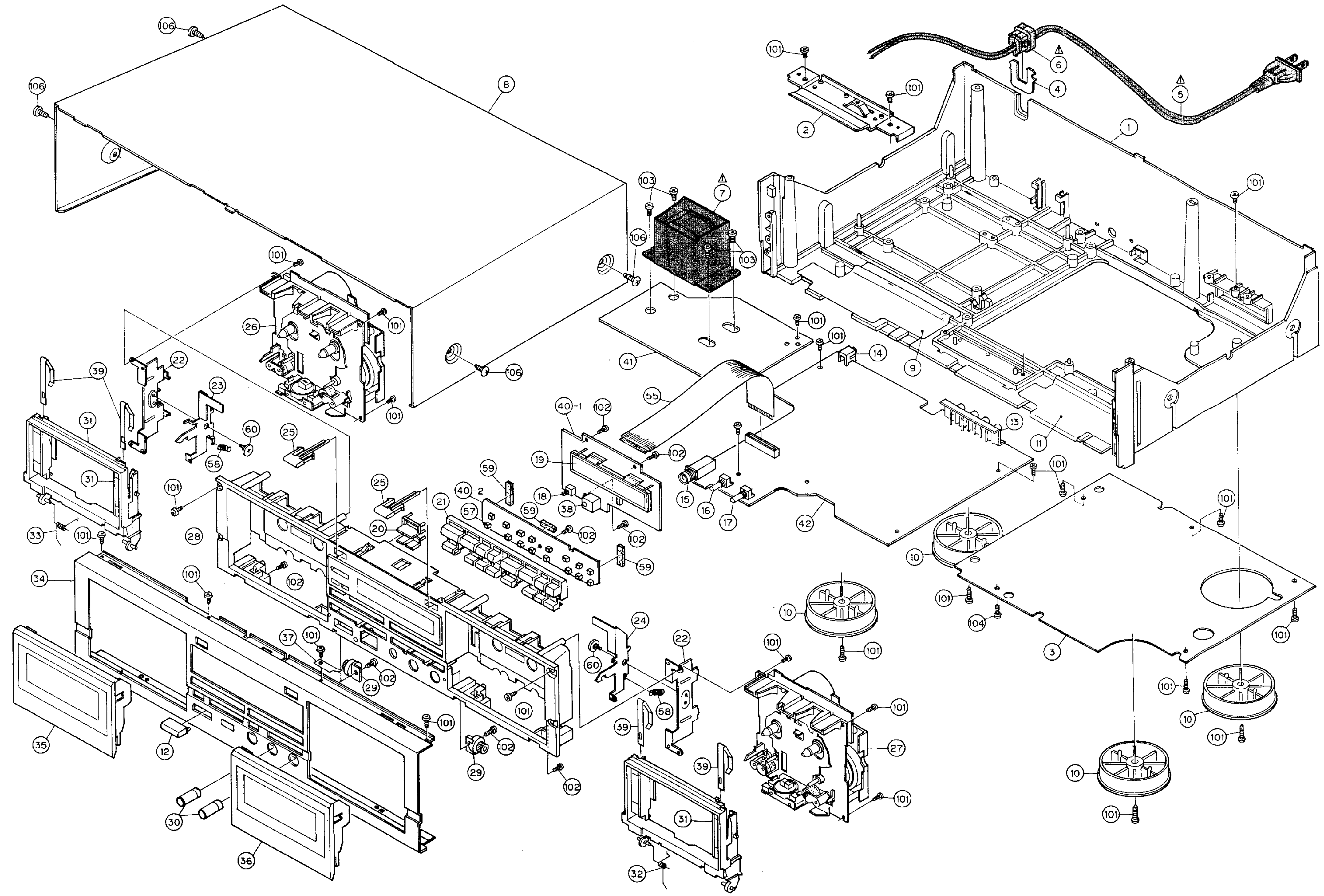
Ref. No.	Part No.	Part Name	Remarks
◉ 1	411 1150 243	CHASSIS	Europe Australia
◉ 1	411 1150 272	CHASSIS	U.S.A. Canada
◉ 1	411 1150 256	CHASSIS	Multi. Voltage (Asia)
◉ 1	411 1150 269	CHASSIS	(Gold)
◉ 2	412 2523 102	EARTH BRACKET	
◉ 3	105 0787 000	BOTTOM COVER	
◉ 4	412 2008 012	BUSHING PLATE	
⚠ 5	**206 2063 009**	**AC CORD WITH PLUG**	**Europe**
⚠ 5	**206 2122 005**	**AC CORD**	**Australia**
⚠ 5	**206 2060 002**	**AC CORD (POLARIZED)**	**U.S.A. Canada**
⚠ 5	**206 6031 026**	**AC CORD**	**Multi. Voltage (Asia)**
⚠ 6	**445 0056 008**	**CORD BUSH**	
⚠ 7	**233 5985 018**	**POWER TRANSFORMER**	**Europe Australia**
⚠ 7	**233 5758 012**	**POWER TRANSFORMER**	**U.S.A. Canada**
⚠ 7	**233 5760 013**	**POWER TRANSFORMER**	**Multi. Voltage (Asia)**
◉ 8	102 0434 406	TOP COVER	
◉ 8	102 0434 419	TOP COVER	(Gold)
◉ 9	414 0673 005	SHIELD LABEL (A)	
10	104 0208 201	FOOT ASS'Y	
◉ 11	414 0625 008	SHIELD LABEL	
12	113 1357 207	POWER SWITCH KNOB	
12	113 1357 236	POWER SWITCH KNOB	(Gold)
13	204 8261 003	4P PIN JACK	
14	204 8416 007	MINI JACK	
15	204 8264 026	HEAD PHONE JACK	
16	211 0706 001	VOLUME CONT. (BIAS)	V09V25FB102K (VR302)
17	211 0707 000	VOLUME CONT. (INPUT)	V0920V23FA104 (VR301)
18	212 1039 000	PUSH SWITCH	(SW520)
19	393 4147 007	FL TUBE	FIP7YM6 (FL501)
20	113 1569 105	PUSH KNOB	
20	113 1569 118	PUSH KNOB	U.S.A.
20	113 1569 121	PUSH KNOB	(Gold)
21	113 1557 308	FUNCTION KNOB	
21	113 1557 311	FUNCTION KNOB	U.S.A.
21	113 1557 324	FUNCTION KNOB	(Gold)
◉ 22	412 3554 002	LEVER STAY	
◉ 23	412 3550 103	EJECT LEVER (A)	
◉ 24	412 3551 102	EJECT LEVER (B)	
25	113 1556 008	EJECT KNOB	
25	113 1556 011	EJECT KNOB	U.S.A.
25	113 1556 024	EJECT KNOB	(Gold)
◉ 26	338 0156 008	CASSETTE MECHA. (A)	
◉ 27	338 0157 007	CASSETTE MECHA. (B)	
◉ 28	103 1558 407	FRONT ESC. ASS'Y	
◉ 28	103 1558 410	FRONT ESC. ASS'Y	U.S.A. Canada
◉ 28	103 1158 423	FRONT ESC. ASS'Y	(Gold)
29	421 9007 007	MINI DAMPER	
30	112 0720 007	VOLUME KNOB (B)	
30	112 0720 010	VOLUME KNOB (B)	(Gold)
31	103 1372 405	CASSETTE BOX	
31	103 1372 418	CASSETTE BOX	U.S.A.
32	463 0659 018	BOX SPRING (R)	
33	463 0660 010	BOX SPRING (L)	
◉ 34	144 2236 208	FRONT PANEL ASS'Y	
◉ 34	144 2236 211	FRONT PANEL ASS'Y	(Gold)
◉ 35	103 1451 300	CASSETTE WINDOW (A) ASS'Y	
◉ 35	103 1451 313	CASSETTE WINDOW (A) ASS'Y	U.S.A.
◉ 35	103 1451 326	CASSETTE WINDOW (A) ASS'Y	(Gold)

Ref. No.	Part No.	Part Name	Remarks
◉ 36	103 1452 309	CASSETTE WINDOW (B) ASS'Y	
◉ 36	103 1452 312	CASSETTE WINDOW (B) ASS'Y	U.S.A.
◉ 36	103 1452 325	CASSETTE WINDOW (B) ASS'Y	(Gold)
37	414 0595 015	EARTH PLATE	
38	499 0150 008	REMOTE UNIT	SBX1610-52 (IC805)
39	463 0655 009	CASSETTE SPRING	
◉ 40	KU-9312	DISPLAY P.W.B. UNIT	
40-1		METER UNIT	
40-2		SWITCH UNIT	
◉ 41	KU-9314	POWER P.W.B. UNIT	
◉ 42	KU-9313	AUDIO P.W.B. UNIT	
◉ 55	009 0082 009	27P FFC CABLE	
57	212 4388 907	TACT SWITCH	
58	463 8238 004	SPRING	
◉ 59	461 0752 003	RUBBER SHEET	
60	473 8047 001	SPECIAL SCREW	
101	473 7508 017	3×10 CBTS (P)-B SCREW	
102	473 7500 044	3×8 CBTC (P)-B SCREW	
103	473 7502 013	4×10 CBTS (P)-Z SCREW	
104	473 7002 018	3×8 CBTC (S)-Z SCREW	
105	473 7002 005	3×6 CBTC (S)-Z SCREW	
106	473 7503 038	4×10 CTTS (P) BK SCREW	
106	473 7503 041	4×10 CTTS (P) NI SCREW	(Gold)
⚠ ★	**212 4698 008**	**VOLTAGE SELECTOR (D)**	**Multi. Voltage (Asia) Only**

WARNING:

- Parts marked with ⚠ and/or shading have special characteristics important to safety.
  Be sure to use the specified parts for replacement.
- Part indicated with the mark ◉ are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- (Gold) in the Remarks column refers with gold front panels.
- Part indicated with the mark ★ is not illustrated in the exploded.

EXPLODED VIEW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60
101
58
101
3
101
10
101
39
101
35
12
101
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102
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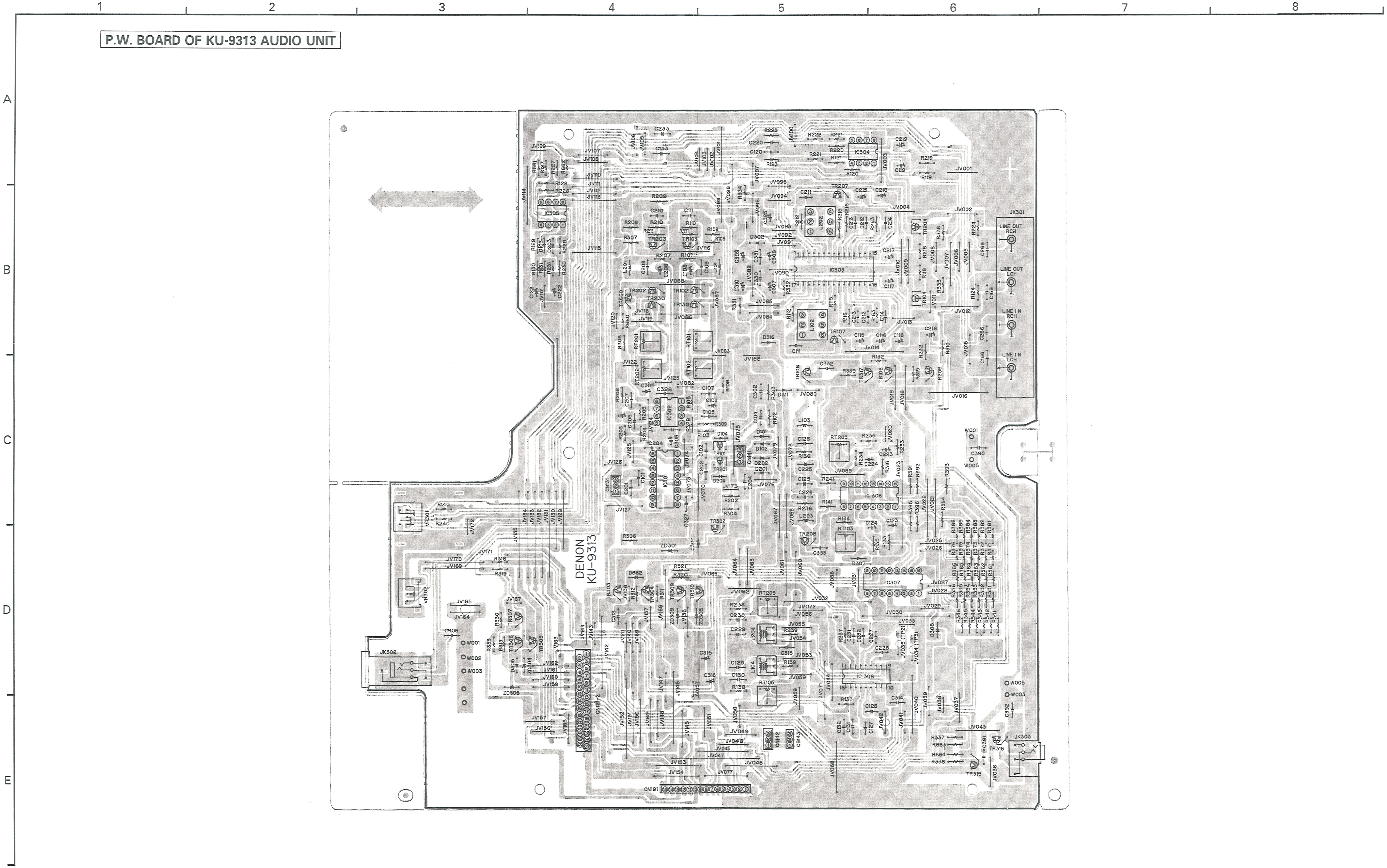
101
36
32
101

WARNING:
Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.



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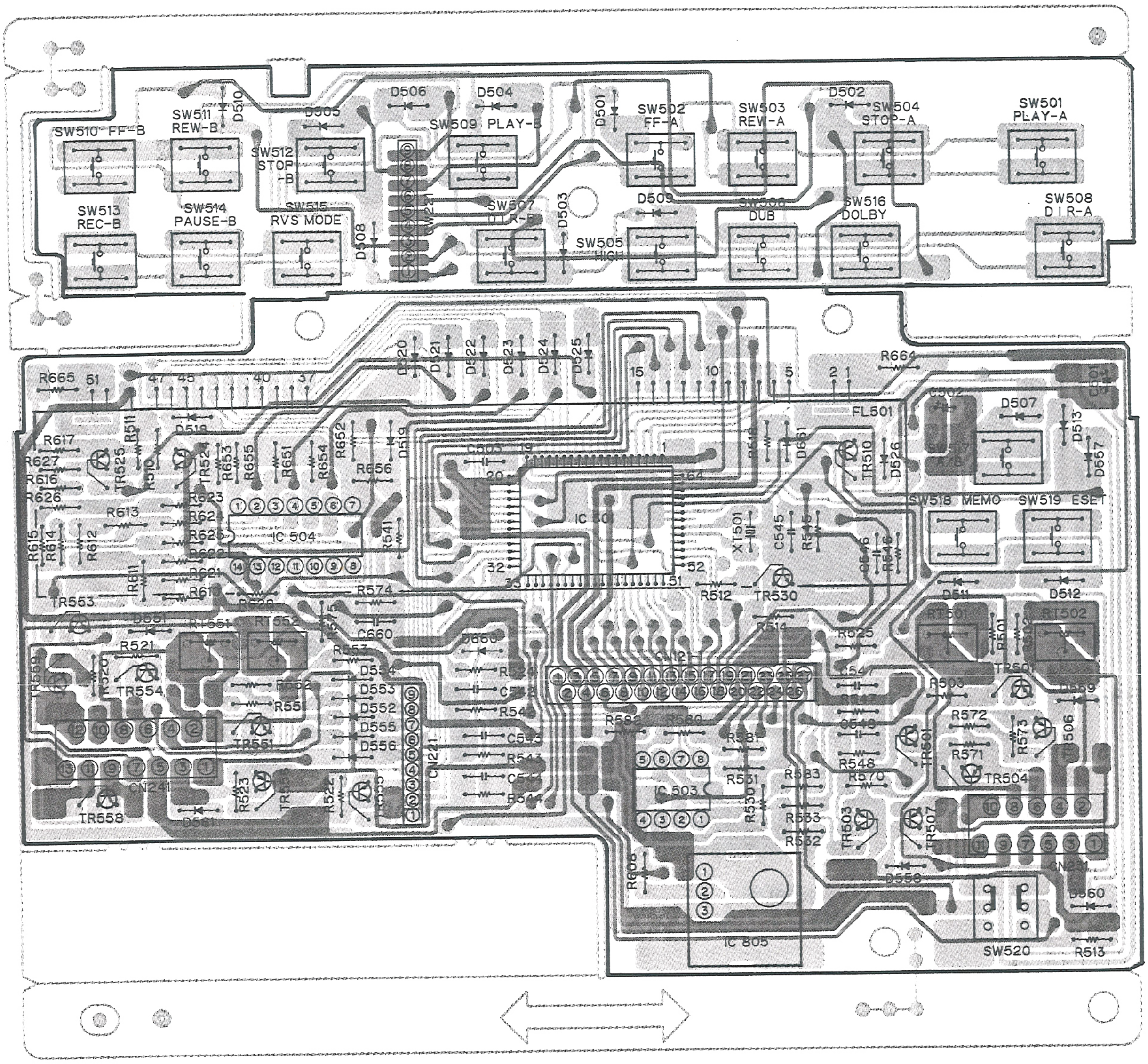
A
B
C
D
E
P.W. BOARD OF KU-9313 AUDIO UNIT
DENON KU-9313
JK301
LINE OUT RCH
LINE OUT LCH
LINE IN RCH
LINE IN LCH
JK302
JK303
IC301
IC302
IC303
IC304
IC305
IC306
IC307
IC308
CN191
VR301
VR302

P.W. BOARD OF KU-9312 DISPLAY UNIT


1
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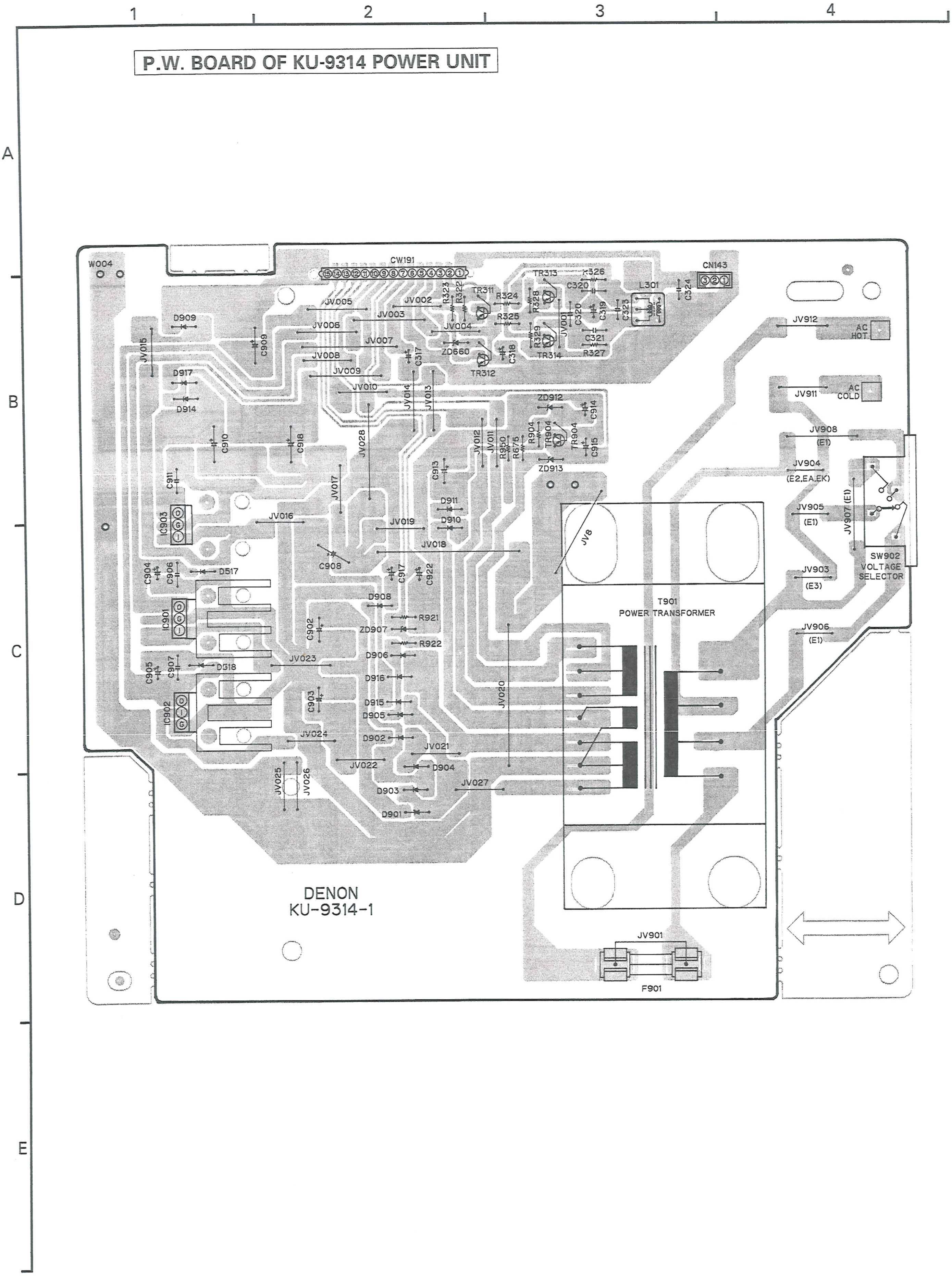
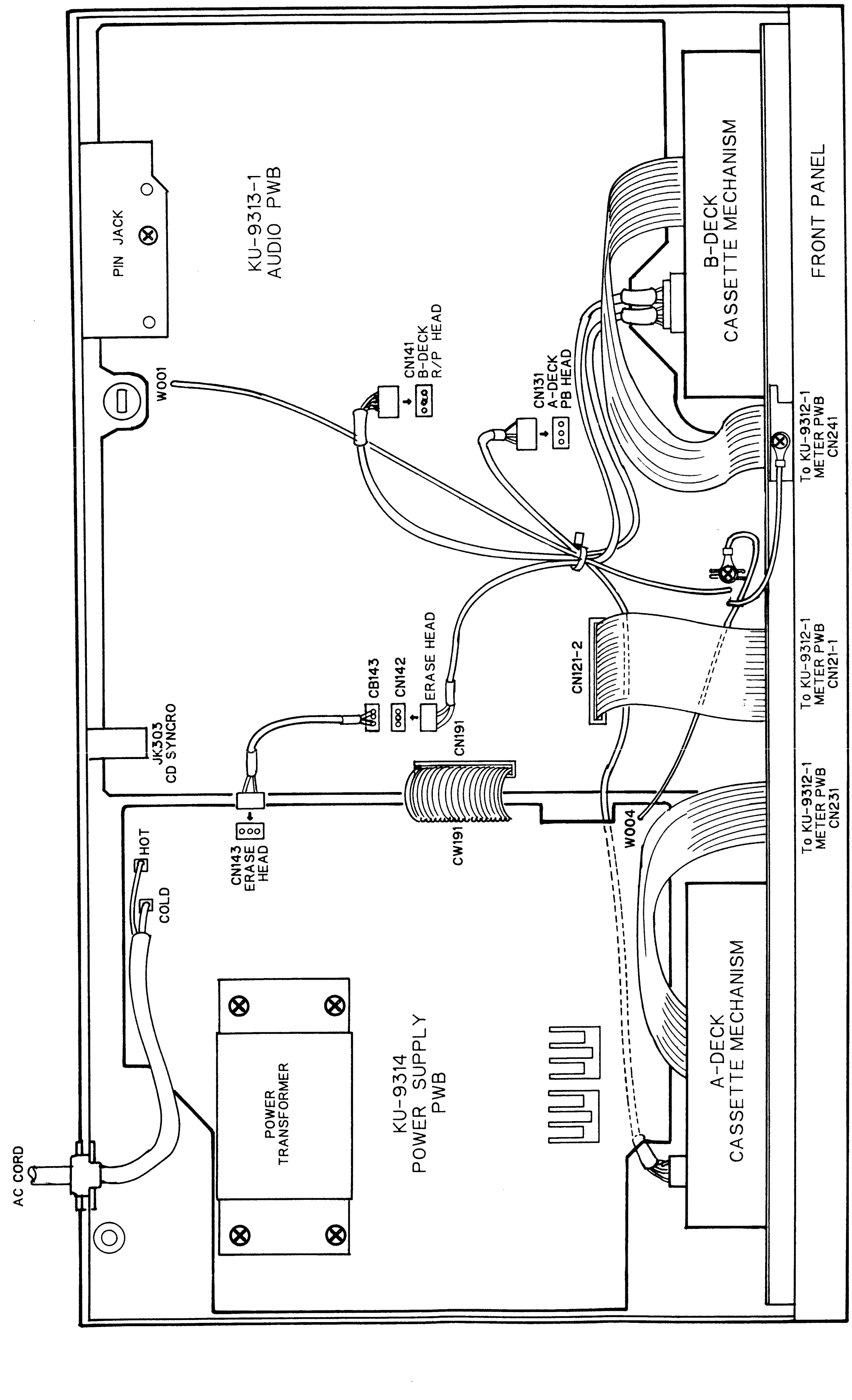
3
4
A
B
C
D
E
SW510 FF-B
SW511 REW-B
SW512 STOP -B
SW509 PLAY-B
SW502 FF-A
SW503 REW-A
SW504 STOP-A
SW501 PLAY-A
SW513 REC-B
SW514 PAUSE-B
SW515 RVS MODE
SW507 DIR-B
SW505 HIGH
SW506 DUB
SW516 DOLBY
SW508 DIR-A
SW517
SW518 MEMO
SW519 RESET
SW520
D501
D502
D503
D504
D505
D506
D507
D508
D509
D510
D511
D512
D513
D518
D519
D520
D521
D522
D523
D524
D525
D526
D552
D553
D554
D555
D556
D557
D558
D559
D560
D561
D651
D660
IC 501
IC 503
IC 504
IC 805
FL501
XT501
CN221
CN241
CN251
RT501
RT502
RT551
RT552
TR501
TR503
TR504
TR505
TR506
TR507
TR510
TR523
TR524
TR525
TR530
TR551
TR553
TR554
TR558
TR559
R501
R502
R503
R510
R511
R512
R513
R514
R521
R522
R523
R525
R541
R543
R544
R547
R548
R552
R553
R570
R571
R572
R573
R574
R581
R583
R606
R610
R611
R612
R613
R614
R615
R616
R617
R620
R621
R622
R623
R624
R625
R626
R627
R651
R652
R653
R654
R655
R656
R664
R665
C502
C503
C545
C546
C547
C548
C549
C660
51
47
45
40
37
15
10
5
2
1
20
19
32
33
51
52
64

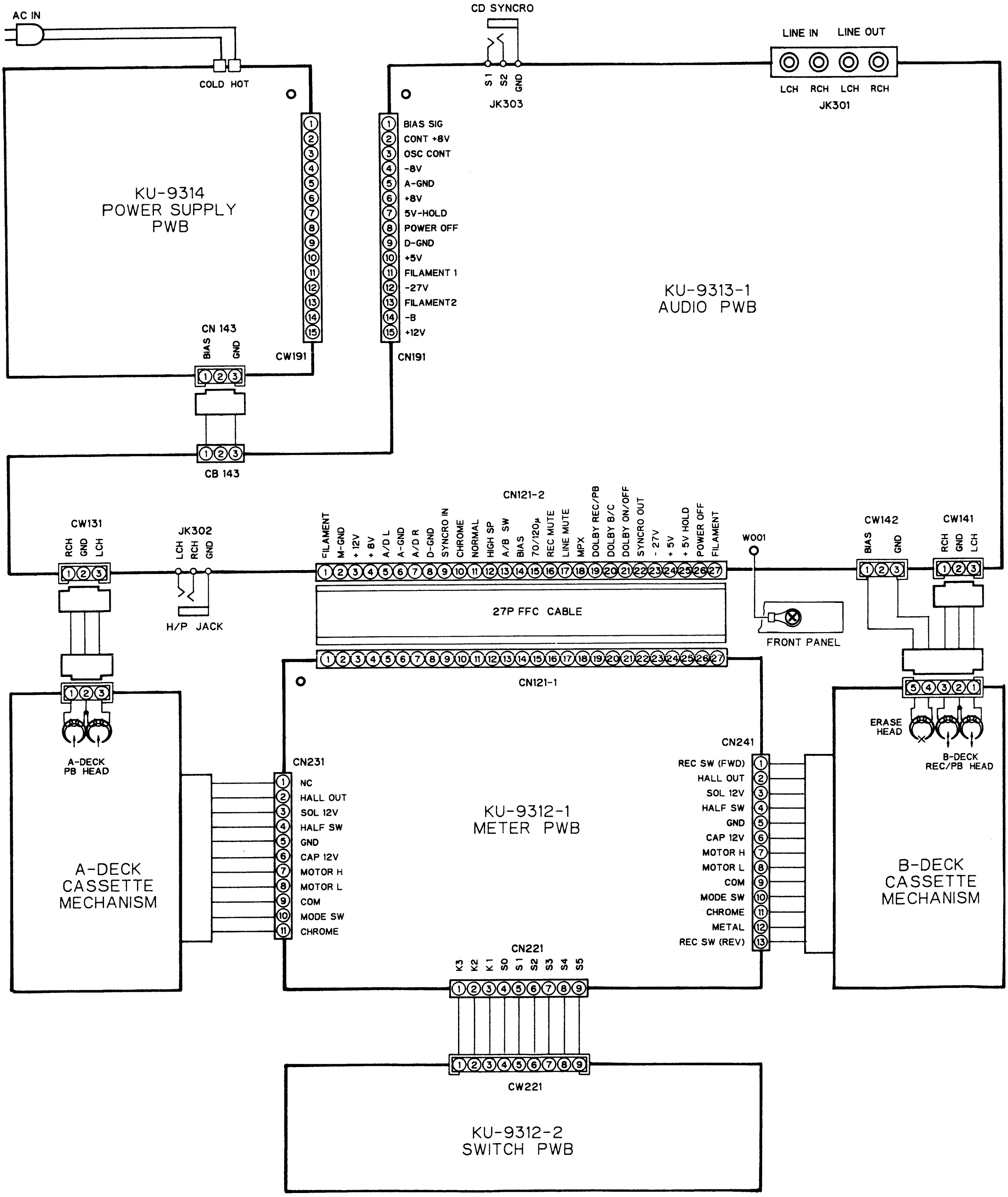
P.W. BOARD OF KU-9314 POWER UNIT


1
2
3
4
A
B
C
D
E
W004
CW191
CN143
TR313
R326
TR311
R324
R328
C320
L301
C324
JV005
JV002
R323
R322
JV003
R325
C319
C323
JV004
JV001
D909
JV006
C909
JV007
R329
C321
JV912
AC HOT
JV015
JV008
C317
ZD660
C318
TR314
R327
D917
JV009
TR312
JV010
JV014
JV013
JV911
AC COLD
D914
ZD912
C914
JV908
(E1)
JV028
JV012
JV011
R904
TR904
C910
C918
R950
R675
TR904
C915
C913
ZD913
JV904
(E2,EA,EK)
C911
JV017
D911
JV905
(E1)
JV907 (E1)
IC903
JV016
JV019
D910
JV8
JV018
SW902
VOLTAGE SELECTOR
C904
C906
D517
C908
C917
C922
JV903
(E3)
D908
IC901
R921
T901
POWER TRANSFORMER
C902
ZD907
R922
JV906
(E1)
D906
C905
C907
D518
JV023
D916
JV020
C903
D915
IC902
D905
JV024
D902
JV021
JV022
D904
JV025
JV026
JV027
D903
D901
DENON
KU-9314-1
JV901
F901

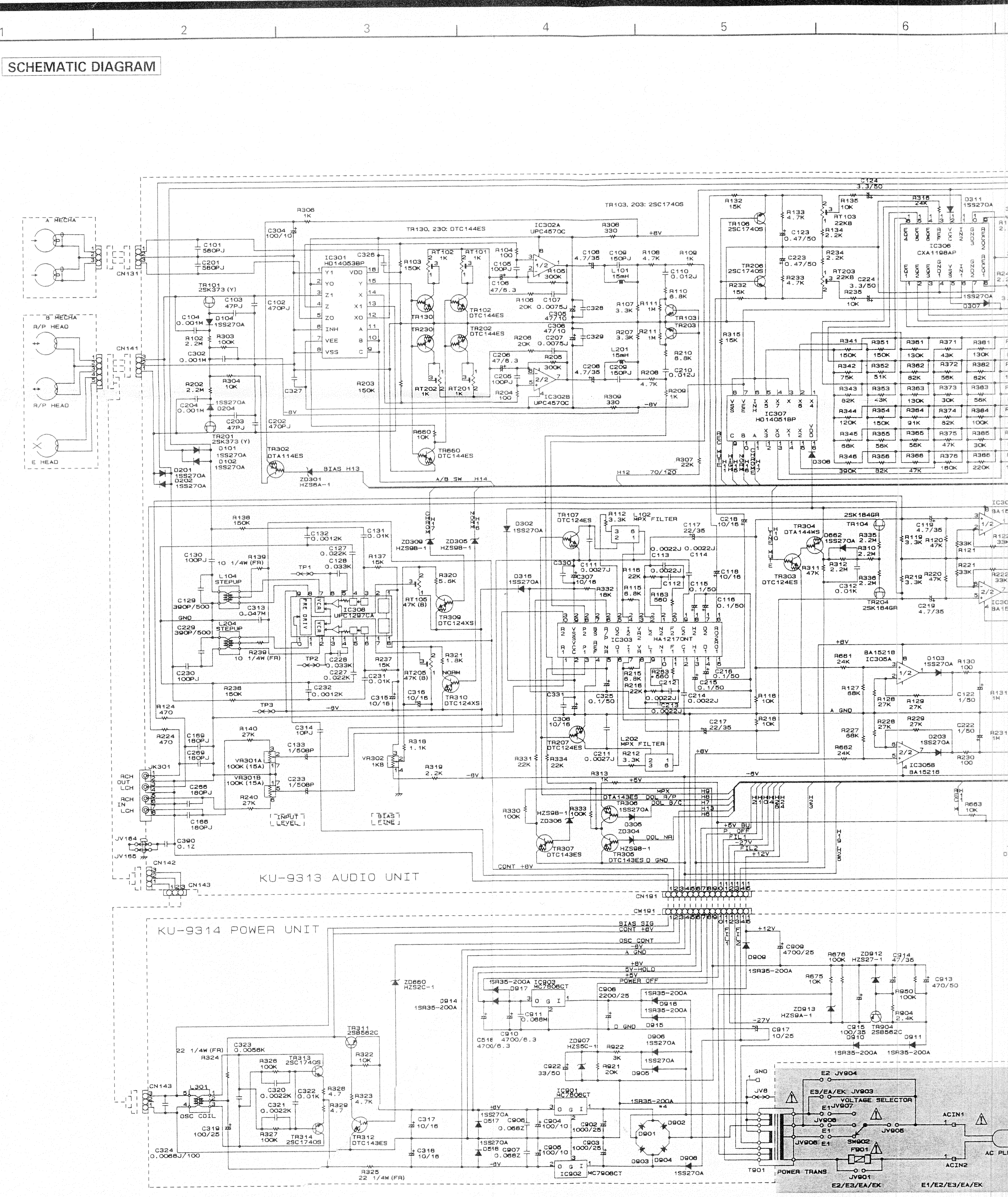
BUNDLEDIAGRAM


PIN JACK
KU-9313-1
AUDIO PWB
B-DECK
CASSETTE MECHANISM
FRONT PANEL
W001
CN141
B-DECK
R/P HEAD
CN131
A-DECK
PB HEAD
To KU-9312-1
METER PWB
CN241
CN121-2
To KU-9312-1
METER PWB
CN121-1
To KU-9312-1
METER PWB
CN231
CB143
CN142
ERASE HEAD
CN191
JK303
CD SYNCRO
CW191
W004
CN143
ERASE
HEAD
HOT
COLD
AC CORD
POWER
TRANSFORMER
KU-9314
POWER SUPPLY
PWB
A-DECK
CASSETTE MECHANISM

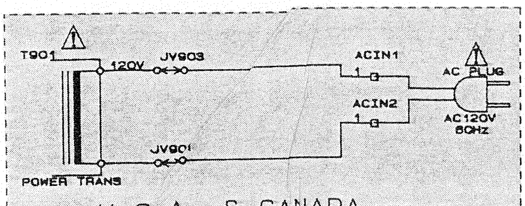
WIRING DIAGRAM


AC IN
COLD
HOT
KU-9314
POWER SUPPLY
PWB
CN 143
BIAS
GND
CW191
CB 143
CD SYNCRO
S 1
S2
GND
JK303
LINE IN
LINE OUT
LCH
RCH
LCH
RCH
JK301
BIAS SIG
CONT +8V
OSC CONT
-8V
A-GND
+8V
5V-HOLD
POWER OFF
D-GND
+5V
FILAMENT 1
-27V
FILAMENT2
-B
+12V
CN191
KU-9313-1
AUDIO PWB
CW131
RCH
GND
LCH
JK302
LCH
RCH
GND
H/P JACK
CN121-2
FILAMENT
M-GND
+ 12V
+ 8V
A/D L
A-GND
A/D R
D-GND
SYNCRO IN
CHROME
NORMAL
HIGH SP
A/B SW
BIAS
70/120μ
REC MUTE
LINE MUTE
MPX
DOLBY REC/PB
DOLBY B/C
DOLBY ON/OFF
SYNCRO OUT
- 27V
+ 5V
+ 5V HOLD
POWER OFF
FILAMENT
27P FFC CABLE
CN121-1
W001
FRONT PANEL
CW142
BIAS
GND
CW141
RCH
GND
LCH
ERASE HEAD
B-DECK REC/PB HEAD
A-DECK PB HEAD
A-DECK
CASSETTE
MECHANISM
CN231
NC
HALL OUT
SOL 12V
HALF SW
GND
CAP 12V
MOTOR H
MOTOR L
COM
MODE SW
CHROME
KU-9312-1
METER PWB
CN241
REC SW (FWD)
HALL OUT
SOL 12V
HALF SW
GND
CAP 12V
MOTOR H
MOTOR L
COM
MODE SW
CHROME
METAL
REC SW (REV)
B-DECK
CASSETTE
MECHANISM
CN221
K3
K2
K1
S0
S1
S2
S3
S4
S5
CW221
KU-9312-2
SWITCH PWB

SCHEMATIC DIAGRAM

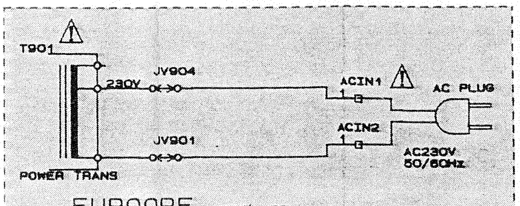


1
2
3
4
5
6
A MECHA
B MECHA
R/P HEAD
E HEAD
CN131
CN141
CN142
CN143
CN191
TR103, 203: 2SC1740S
TR130, 230: DTC144ES
IC301 HD14053BP
IC302A UPC4570C
IC302B UPC4570C
IC303 HA12170NT
IC306 CXA1198AP
IC307 HD14051BP
IC308 UPC1297CA
IC305A BA15218
IC305B BA15218
TR101 2SK373 (Y)
TR201 2SK373 (Y)
TR302 DTA114ES
TR309 DTC124XS
TR310 DTC124XS
TR660 DTC144ES
TR107 DTC124ES
TR207 DTC124ES
TR304 DTA144WS
TR303 DTC124ES
TR104 2SK184GR
TR204 2SK184GR
TR306 DTA143ES
TR307 DTC143ES
TR305 DTC143ES
TR106 2SC1740S
TR206 2SC1740S
L101 15mH
L201 15mH
L102 MPX FILTER
L202 MPX FILTER
L104 STEPUP
L204 STEPUP
BIAS H13
A/B SW H14
JK301
RCH OUT LCH
RCH IN LCH
VR301A 100K (15A)
VR301B 100K (15A)
VR302 1KB
INPUT LEVEL
BIAS FINE
MPX
DOL A/P
DOL B/C
DOL NR
+5V BU
P OFF
FIL1
FIL2
-27V
+12V
CONT +8V
KU-9313 AUDIO UNIT
KU-9314 POWER UNIT
BIAS SIG
CONT +8V
OSC CONT
-8V
A GND
+8V
5V-HOLD
+5V
POWER OFF
IC903 MC7805CT
IC901 MC7808CT
IC902 MC7908CT
TR311 2SB562C
TR313 2SC1740S
TR314 2SC1740S
TR312 DTC143ES
TR904 2SB562C
L301 OSC COIL
ZD912 HZS27-1
ZD913 HZS9A-1
ZD907 HZS5C-1
ZD660 HZS2C-1
D909 1SR35-200A
T901 POWER TRANS
E2 JV904
E3/EA/EK JV903
VOLTAGE SELECTOR
E1 JV907
JV908
JV905
JV906
SW902
F901
JV901
ACIN1
ACIN2
AC PL
E2/E3/EA/EK
E1/E2/E3/EA/EK



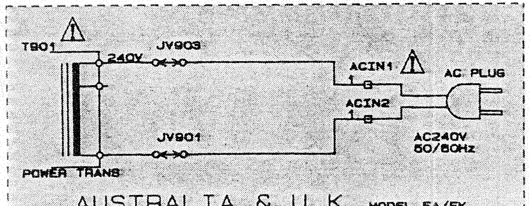
T901
120V
JV903
ACIN1
ACIN2
AC PLUG
AC120V 60Hz
JV901
POWER TRANS

U.S.A. & CANADA MODEL E3



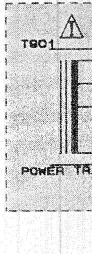
T901
230V
JV904
ACIN1
ACIN2
AC PLUG
AC230V 50/60Hz
JV901
POWER TRANS

EUROOPE MODEL E2

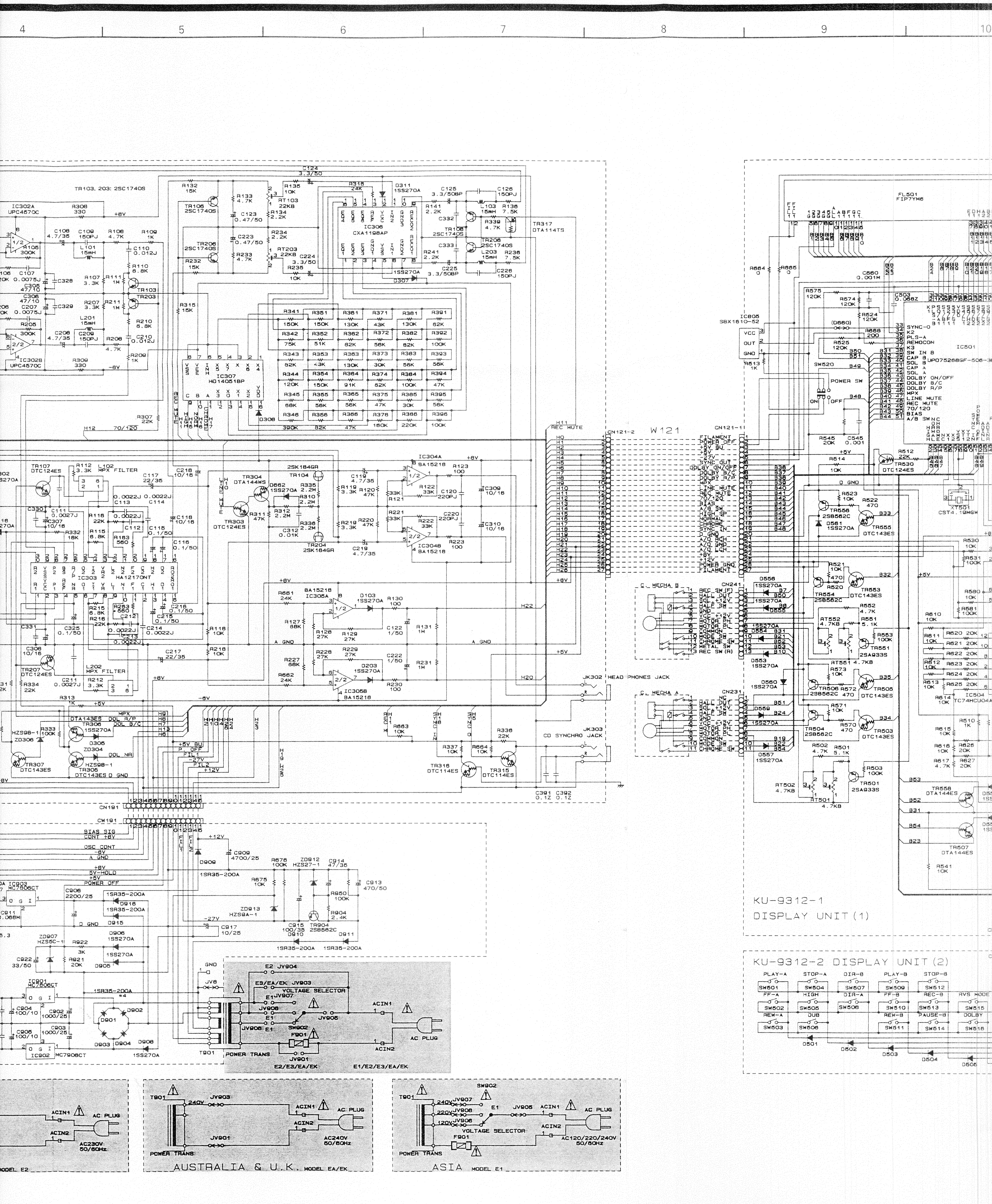


T901
240V
JV903
ACIN1
ACIN2
AC PLUG
AC240V 50/60Hz
JV901
POWER TRANS

AUSTRALIA & U.K. MODEL EA/EK



T901
POWER TR


4
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6
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8
9
10
TR103, 203: 2SC1740S
IC302A UPC4570C
IC302B UPC4570C
IC306 CXA1198AP
IC307 HD14051BP
IC303 HA12170NT
IC304A BA15218
IC304B BA15218
IC305A BA15218
IC305B BA15218
TR104 2SK184GR
TR204 2SK184GR
TR317 DTA114TS
W121
CN121-2
CN121-1
H11 REC MUTE
FILAMENT
POWER OFF
+5V BU
-27V
SYNC OUT
DOLBY ON/OFF
DOLBY B/C
DOLBY R/P
MPX
LINE MUTE
REC MUTE
70/120
BIAS
A/B SW
HIGH SP
NORMAL
CHROME
SYNC IN
D GND
A/Q GND
+12V
POWER GND
C. MECHA B
C. MECHA A
CN241
CN231
HEAD PHONES JACK
CD SYNCHRO JACK
JK302
JK303
MPX FILTER
CN191
FL501 FIP7YM6
IC805 SBX1610-52
IC501 UPD75268GF-506-3B
POWER SW
XT501 CST4.19MGW
IC504 TC74HCU04A
KU-9312-1
DISPLAY UNIT (1)
KU-9312-2 DISPLAY UNIT (2)
PLAY-A
STOP-A
DIR-B
PLAY-B
STOP-B
RVS MODE
FF-A
HIGH
DIR-A
FF-B
REC-B
REW-A
DUB
REW-B
PAUSE-B
DOLBY
IC903 MC7805CT
IC901 MC7808CT
IC902 MC7908CT
T901
POWER TRANS
VOLTAGE SELECTOR
AC PLUG
ACIN1
ACIN2
E2/E3/EA/EK
E1/E2/E3/EA/EK
AC230V 50/60Hz
MODEL E2
AC240V 50/60Hz
AUSTRALIA & U.K. MODEL EA/EK
AC120/220/240V 50/60Hz
ASIA MODEL E1

WARNING:

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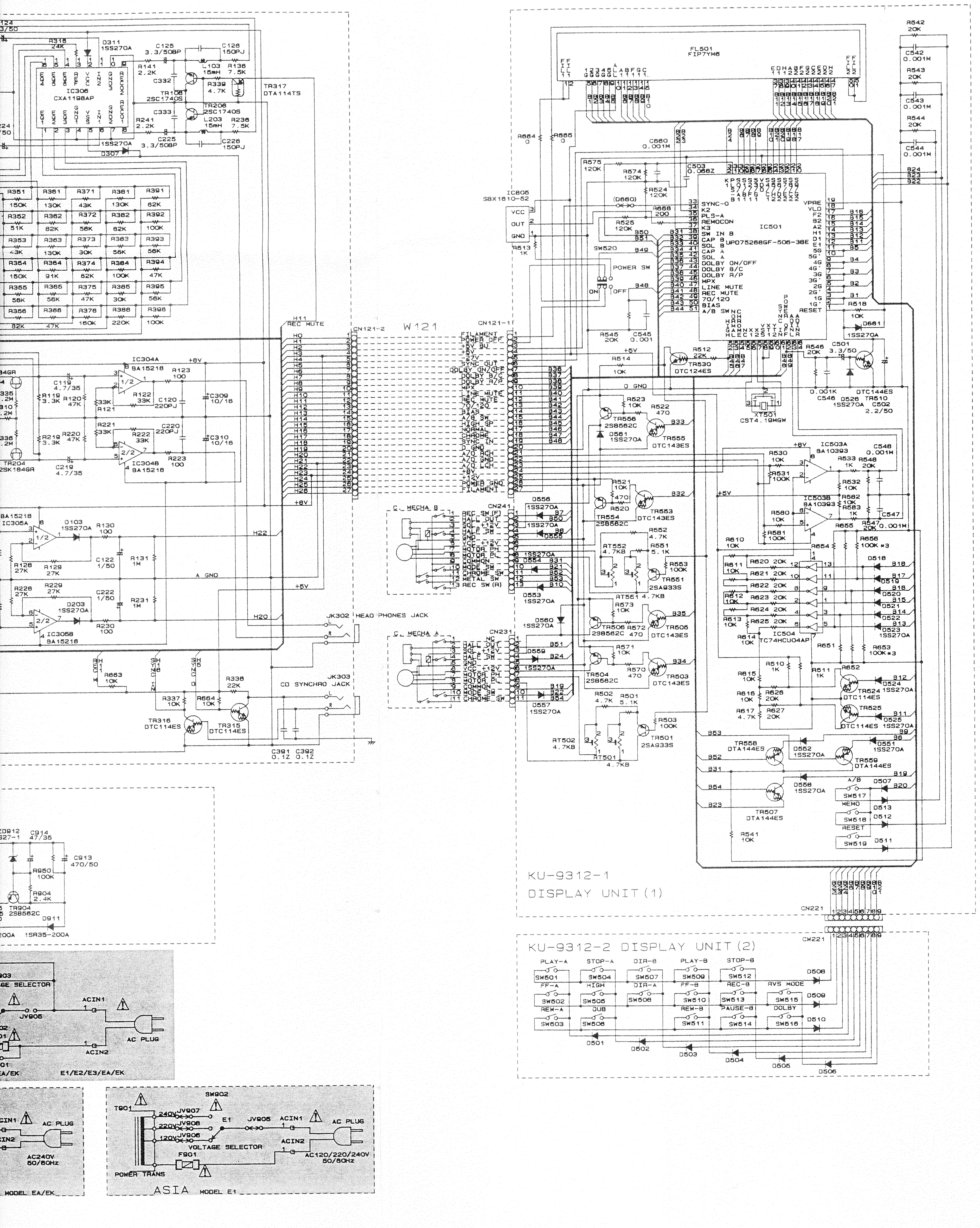
Suppl


6
7
8
9
10
11
A
B
C
D
E
F
G
IC306
CXA1198AP
IC304A
BA15218
IC304B
BA15218
IC305A
IC305B
W121
CN121-1
CN121-2
CN241
CN231
C. MECHA B
C. MECHA A
JK302 HEAD PHONES JACK
JK303
CD SYNCHRO JACK
FL501
FIP7YM8
IC501
UPD75268GF-506-3BE
IC505
SBX1610-52
XT501
CST4.19MGW
IC503A
BA10393
IC503B
BA10393
IC504
TC74HCU04AP
POWER SW
SW520
KU-9312-1
DISPLAY UNIT (1)
CN221
CW221
KU-9312-2 DISPLAY UNIT (2)
PLAY-A
STOP-A
DIR-B
PLAY-B
STOP-B
FF-A
HIGH
DIR-A
FF-B
REC-B
RVS MODE
REW-A
DUB
REW-B
PAUSE-B
DOLBY
A/B
MEMO
RESET
VOLTAGE SELECTOR
AC PLUG
ACIN1
ACIN2
JV905
E1/E2/E3/EA/EK
AC240V 50/60Hz
MODEL EA/EK
SW902
T901
JV907
JV908
JV906
240V
220V
120V
F901
POWER TRANS
AC120/220/240V 50/60Hz
ASIA MODEL E1

WARNING:
Parts marked with this symbol ⚠ ▭ have critical characteristics.
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